UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

FEDERAL HOUSING FINANCE AGENCY,
AS CONSERVATOR FOR THE FEDERAL
NATIONAL MORTGAGE ASSOCIATION
AND THE FEDERAL HOME LOAN
MORTGAGE CORPORATION,

           Plaintiff,

           -against-

NOMURA HOLDING AMERICA, INC.;
NOMURA ASSET ACCEPTANCE
CORPORATION; NOMURA HOME
EQUITY LOAN, INC.; NOMURA CREDIT
& CAPITAL, INC.; NOMURA SECURITIES
INTERNATIONAL, INC.; RBS SECURITIES
INC. (f/k/a GREENWICH CAPITAL
MARKETS, INC.); DAVID FINDLAY;
JOHN MCCARTHY; JOHN P. GRAHAM;
NATHAN GORIN; and DANTE LAROCCA,

           Defendants.

No. 11 CIV. 6201 (DLC)

**PLAINTIFF FHFA'S MEMORANDUM OF LAW IN OPPOSITION
TO DEFENDANTS' MOTION TO EXCLUDE THE EXPERT TESTIMONY
OF JOHN A. KILPATRICK, PH.D.**

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Plaintiff Federal Housing Finance Agency ("FHFA"), as Conservator for the Federal National Mortgage Association ("Fannie Mae") and the Federal Home Loan Mortgage Corporation ("Freddie Mac" and, together with Fannie Mae, the "GSEs"), respectfully submits this memorandum of law in opposition to Defendants' Motion to Exclude the Expert Testimony of John A. Kilpatrick, Ph.D. concerning the Greenfield AVM and the "Credibility Assessment Model" (the "Motion" or "Mot.").[1]

PRELIMINARY STATEMENT

From beginning to end, Defendants' attack on the expert opinions of FHFA's appraisal expert, Dr. John Kilpatrick, goes to the question of the weight the fact finder should afford his opinions, not their reliability under the standards established by *Daubert* and its progeny. Whether taking issue with the questions Dr. Kilpatrick—an appraiser and academic with many decades of experience in the residential appraisal field—utilized to evaluate the credibility of the Nomura appraisals in his Credibility Assessment Model ("CAM") analysis, or asserting that his cross validation filter is deficient based on assertions (disputed among Defendants' own experts) about how best to select observations in an automated valuation model, Defendants' motion is nothing more than a hodgepodge of topics that Defendants might wish to cross-examine Dr. Kilpatrick about at trial. None, however, raise the type of fundamental methodological flaws that warrant preclusion.

Defendants' desire to preclude Dr. Kilpatrick's opinions, while meritless, is understandable. Dr. Kilpatrick opines that thousands of the loans in the Nomura Securitizations at issue in this case were based on inflated appraisal values, that many had undisclosed loan-to-value-ratios ("LTVs") in excess of 100%, and that many more represented in the offering documents to have an LTV of 80% or less actually had LTVs above 80% and 90%. Dr.

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[1] "Defendants" include Nomura Holding America Inc., Nomura Asset Acceptance Corporation, Nomura Home Equity Loan, Inc., Nomura Credit & Capital, Inc., Nomura Securities International, Inc. ("Nomura Securities"), David Findlay, John McCarthy, John P. Graham, Nathan Gorin, N. Dante LaRocca (collectively "Nomura"), and RBS Securities Inc. (f/k/a Greenwich Capital Markets, Inc.) ("RBSSI"). Although not a named defendant in this action, The Royal Bank of Scotland Group PLC, together with RBSSI are referred to as "RBS."

Kilpatrick's trial testimony will be very compelling. To make matters worse, Defendants have not (and given the close of expert discovery cannot) offer any expert testimony establishing that the original appraisals of the subject loans at issue were not inflated or that they did not lack credibility. Indeed, not one of Defendants' *four* opposing experts was prepared to opine either that the wholesale inflation of Defendants' appraisals Dr. Kilpatrick observed did not occur, or that the original appraisals were "credible" as that term is used in the *Uniform Standards of Professional Appraisal Practice* ("USPAP") and other applicable appraisal standards and practice.[2] To the contrary, Defendants' appraisal standards expert, Michael Hedden, conceded at his deposition that the pressure on appraisers to inflate their appraisal opinions at the time was widely known and that the CAM questions used by Dr. Kilpatrick are, in fact, relevant to assessing the credibility of an appraisal.[3]/[4] Similarly, Defendants' real estate valuation professor, Professor Isakson testified that, as in the Goldman, HSBC and Ally cases, he had no opinion as to whether any of the appraisals were inflated or not.[5] As for the *four* AVMs used by Defendants AVM "benchmarking" expert, Lee Kennedy, as in the *Goldman Sachs* and *HSBC*

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[2]   *See* Ex. 8 (Hedden 11/21 Tr.) at 70:17-71:4 ("Q. Are you offering any opinions in this case whatsoever as to whether these 205 appraisals are or aren't credible, as that term is used under USPAP? A. I have not made that determination. Q. So there's not a single one of the 205 appraisals that you are sitting here and opining that the appraisal is credible or not credible? A. That's correct.").

[3]   Ex. 8 (Hedden 11/21 Tr.) at 130:5-11 ("Q. Do you believe, as an appraisal professional and somebody who has sat as the president of the Appraisal Institute New Jersey chapter in 2009, do you believe that there was such pressure placed on appraisers during that period? A. Yes."); *see also* Ex. 27 (Willoughby 3/28 Tr.) at 100:20-25 ("Q When you were working in the period between 2004 and 2007, were you aware of appraisers working around you who felt they were being pressured to get predetermined values to their appraisals? A Yes."); Ex. 23 (Moylan 4/11 Tr.) at 160:19-23 ("Q. [From] your perspective, was it common knowledge that appraisers were being pressured in the '05-to-'08 period? A. Yes.").

[4]   Ex. 8 (Hedden 11/21 Tr.) at 62:3-14 ("So I think that, you know, the questions do go to certain issues relating to credibility.").

[5]   Ex. 10 (Isakson 11/7 Tr.) at 176:3-177:10; Ex. 9 (Isakson 6/19 Tr.) at 229:3-24 ("Q. You have no opinion as to whether the appraised values were right or wrong? A. That is correct."); *see* Ex. 8 (Hedden 11/21 Tr.) at 70:17-71:4 ("Q. Are you offering any opinions in this case whatsoever as to whether these 205 appraisals are or aren't credible, as that term is used under USPAP? A. I have not made that determination. Q. So there's not a single one of the 205 appraisals that you are sitting here and opining that the appraisal is credible or not credible? A. That's correct. ").

Actions, *each* showed similar levels of appraisal inflation as evidenced by Dr. Kilpatrick's methodology.[6]

Boiled down its essence, Defendants position is not that the appraisals at issue were not inflated or lacked credibility. To the contrary, Defendants' sole assertion, embodied in their motion, is that Dr. Kilpatrick has failed to prove the degree of inflation and lack of credibility to Defendants' satisfaction. Thankfully, the legal standard Defendants urge upon the Court, one in which scattershot disagreement with an expert's methodology warrants outright preclusion, bears no relationship to the standards embodied in Federal Rule of Evidence 702 or *Daubert*.

The true issues that the Court's decision turn on are not in dispute. *First*, Dr. Kilpatrick is eminently qualified to offer his opinions. *Second*, Dr. Kilpatrick's methodologies are not just well accepted, they have been thoroughly validated and are more than sufficiently reliable to present to a jury. *Third*, the remainder of Defendants' various attacks and assertions (including the eleventh hour attacks they submit as declarations in their *Daubert* motion) amount to nothing more than disagreements with Dr. Kilpatrick's approach and professional judgment that go, at most, to the weight the jury may accord his testimony.

Recognizing that their attacks on Dr. Kilpatrick's AVM methodology are futile, Defendants tellingly reverse the order in which Dr. Kilpatrick presents his methodology, focusing the brunt of their attack on the CAM methodology although the CAM methodology logically follows on from Dr. Kilpatrick's AVM methodology.[7] Defendants' attacks on the CAM methodology are, however, no more effective than their makeweight attacks on Dr.

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[6]   Ex. 38 (Kennedy 7/25 Dep. Ex. 41218, Formatted Goldman Kennedy Deposition Table 1, Summary) (Greenfield AVM 8.9% inflation; Collateral Analytics AVM 9.2% inflation; RealInfo AVM 11.0% inflation; RELAR AVM 16.2% inflation); Ex. 38 (Kennedy 7/25 Dep. Ex. 41218, Formatted HSBC Kennedy Deposition Table 1, Summary) (Greenfield AVM 8.0% inflation; Collateral Analytics AVM 8.6% inflation; RealInfo AVM 10.1% inflation; RELAR AVM 14.6% inflation).

[7]   In the Kilpatrick *Daubert* motion filed by the same law firm in the *Goldman Sachs* case, the attack was principally on the AVM methodology. *See* Defs.' Consolidated Mot. to Exclude Testimony of John A. Kilpatrick, *FHFA v. Goldman Sachs & Co.*, No. 11-cv-6198, Dkt. No. 838 (S.D.N.Y. Aug. 5, 2014). This change in focus underscores the strength of the AVM methodology. It is likely the Court's order precluding the introduction of additional desktop reviews on a sample of Nomura's appraisals that caused Defendants, misguidedly, to focus on the CAM methodology despite the fact that it is just as reliable and valid as Dr. Kilpatrick's AVM methodology. *See* 11/4 Order (Dkt No. 897).

Kilpatrick's AVM methodology. *First*, Professor Epley (who, as set forth in FHFA's opposition to Defendants' *Daubert* motion focused on his opinions, will not testify at trial and whose expert report FHFA primarily served in anticipation of Defendants' present motion) establishes that the 31 questions Dr. Kilpatrick used to score appraisals under the CAM, and their relative weightings, are reasonable and tied directly to the Uniform Residential Appraisal Review form and certification (the "URAR Form") on which the HSBC appraisals were performed. *Second*, to validate his CAM findings Dr. Kilpatrick had a separate, independent review performed by appraisers employed by third-party appraisal firm Recovco on a large random sample of the Nomura appraisals.

Nor do Defendants' specific attacks on the CAM establish a lack of reliability. *First*, the issue of whether the CAM questions go to the credibility of the appraisal is a classic issue of expert judgment that goes to the weight, not the admissibility, of Dr. Kilpatrick's CAM opinions. *Second*, Defendants' elaborate effort to paint Dr. Kilpatrick as improperly testifying to the state of mind of the Nomura appraisers goes, as it did at deposition, nowhere. Far from purporting to be a "mind reader," Dr. Kilpatrick appropriately narrowed his opinions to the degree to which the Nomura Appraisals evidenced gross deviation from USPAP and applicable appraisal standards and practice. Dr. Kilpatrick's testimony is classic standard-of-care testimony from which the jury (not Dr. Kilpatrick) can infer the appraisers' state of mind. *Finally*, the makeweight argument about prior changes that were made to the CAM code has no impact on the CAM's reliability.

Defendants are also simply wrong when they imply that Dr. Kilpatrick's valuation methodology—using an automated valuation model (the "Greenfield AVM")—is an unknown, unreliable methodology. Regression analyses and AVMs are well accepted in the real estate industry, not least by the valuation diligence groups that performed diligence on the Securitizations. Moreover, notwithstanding Defendants' fallback argument that the Greenfield AVM was created for litigation, Defendants cite no requirement that the *specific* model or method based on these well-known techniques be published or used commercially in the industry

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before they may be used by an expert witness in litigation. Further, the Greenfield AVM has, in fact, been validated in a number of ways: *first*, based on the sales prices of Nomura's own sample sales properties; *second*, based on the sales prices of Goldman Sachs, HSBC and Ally's sample sales prices in prior cases before this Court (defended in the case of Goldman by the same law firm); *third*, based on the three commercially available AVMs used by Nomura's AVM expert, Lee Kennedy, to "benchmark" the Greenfield AVM; *fourth*, based on contemporaneous AVMs used by Nomura and other former defendant banks; and *finally* by Dr. Albert Lee, an accomplished econometrician, who issued the attached expert declaration in support of this opposition.

Further, none of the scattershot criticisms Defendants level at Dr. Kilpatrick's AVM are valid, let alone establish that the AVM is unreliable. To the contrary, the criticisms are, at best, quintessential battle-of-expert issues that go to weight. For example, Defendants' own experts uniformly agree that data filtering is appropriate and necessary in multiple regression modeling;[8] they simply purport to disagree with Dr. Kilpatrick (and also among themselves) with the filters that Dr. Kilpatrick utilized based on his experience, judgment and analysis. More importantly, the only filter that matters to his value opinions—the "Cross-Validation Filter"—is not only appropriate, as Nomura's own expert conceded, its relaxation (which forces the AVM to consider observations that either contain errant data or contain significant additional hedonic characteristics which were not available or discernible to Dr. Kilpatrick's AVM methodology), does not even have a material impact on Dr. Kilpatrick's value opinions unless it is all but, completely, removed. Similarly, contrary to Defendants' claims, Dr. Kilpatrick offers his finding of inflation at 95% statistical confidence, an academic standard that is often applied to academic econometric regression analysis in peer reviewed journals but that is not applicable to commercial AVMs utilized in the industry.

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[8] Ex. 7 (Hausman 7/30 Tr.) at 50:4-19, 54:7-11, 160:21-161:9 ("Q. You have many scholarly research articles you've co-authored or authored in which you yourself have removed certain outliers on a principle basis, right, sir? A. Yes."); Ex. 9 (Isakson 6/19 Tr.) at 103:21-104:22, 288:5-16, 337:25-338:20; Ex. 11 (Kennedy 7/25 Tr.) at 270:6-24.

FACTUAL BACKGROUND

In support of its claim that Defendants' disclosures concerning LTV ratios were false, FHFA submitted reports from real estate appraisal and finance expert John A. Kilpatrick, Ph.D. Dr. Kilpatrick's reports address (1) the accuracy of the appraisals underlying the LTV ratios of the sample loans selected by Dr. Cowan (the "Accuracy Report," as supplemented); and (2) if the appraisals for a subset of those loans violated the Uniform Standards of Professional Appraisal Practice ("USPAP") and were thus not "credible," as that term is defined by USPAP and other applicable standards of appraisal practice (the "Credibility Report"). FHFA also submitted a report from real estate professor Dr. Donald Epley regarding the methodology that Dr. Kilpatrick used in his Credibility Report.

Dr. Kilpatrick submitted to 42 hours of deposition testimony by Defendants in this case and in the *HSBC* and *Goldman Sachs* actions. In response to Dr. Kilpatrick's reports, Defendants presented reports by four putative experts: Dr. Jerry A. Hausman, Dr. Hans R. Isakson, Mr. Lee Kennedy, and Mr. Michael Hedden. In bringing their *Daubert* motion against Dr. Kilpatrick, Defendants submitted two additional expert declarations, including one by a previously-undisclosed expert. *See* Hausman Decl; O'Connor Decl.

A.   Dr. Kilpatrick's Qualifications

Dr. Kilpatrick is well-qualified to opine on the accuracy of the appraisals at issue in this case (the "Nomura Appraisals"). He holds a Ph.D. in Real Estate Finance from the University of South Carolina and is a well-credentialed and experienced appraisal professional. In addition to authoring more than a hundred peer-reviewed publications and authoring or editing four real estate texts, Dr. Kilpatrick has more than 30 years of experience in residential real estate finance and appraisal practice. He is also a Member of the Appraisal Institute; holds the two highest appraisal accreditations issued by the Institute (the MAI and SRA designations); and has been designated by the Appraisal Qualifications Board as a nationally certified appraisal standards instructor. *See* Ex. 41 (Credibility Report) at 5-7.

B.   The Greenfield AVM

To evaluate the accuracy of the original appraisals, Dr. Kilpatrick used an automated valuation model ("AVM") referred to as the "Greenfield AVM" to revalue a sample of the subject properties ("Nomura Sample Properties").[9] Like all AVMs, the Greenfield AVM is an appraisal tool that values a subject property by comparing an identified set of hedonic property characteristics and sales prices.[10] Ex. 45 (Accuracy Report) at 27-29. The AVM process is similar to the process used by an individual appraiser to estimate the value of a subject property, in which he or she uses a "sales comparison grid" to identify three comparable, recently-sold properties and then makes adjustments based on how characteristics of those comparable properties differ from the subject property. *Id.* at 28. The difference is that an AVM uses hundreds of comparable properties, not three, and thus is not prone to the subjectivity and bias of an individual appraiser. *Id.* at 27.

The Greenfield AVM employs two hedonic regression sub-models to establish a retrospective valuation:[11](i) a log-linear ordinary least squares regression model (the "OLS model"); and (ii) a log-linear ordinary least squares regression model that includes certain location coordinate data to account for geographic or spatial trends in property values (the "OLSXY model"). Ex. 46 (Accuracy Report App'x 5-1) at 9. Using standard regression methodology, the OLS model uses up to seven hedonic characteristics—tax assessed value ("TAV"), bathrooms, year built, lot size, square footage, the actual sales price of a comparable property, and time adjustments (days and days squared)—to predict the market value of the subject property. Ex. 45 (Accuracy Report) at 33. The OLSXY model uses the same hedonic

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[9]   Dr. Kilpatrick ran the Greenfield AVM on the subject properties associated with the sample loans selected by Dr. Charles Cowan. Defendants do not challenge Dr. Cowan's sampling in their motion.

[10]   "A hedonic pricing model . . . measures the effect of various product attributes on price." *In re Elec. Books Antitrust Litig.*, No. 11 MD 2293 (DLC), 2014 WL 1282293, at *9 n.15 (S.D.N.Y. Mar. 28, 2014).

[11]   A "hedonic regression" is "a multiple regression model that relates price (or rent) to significant component characteristics that are bundled together in an economic good or services such as a residence, an automobile, a building site, and the like. The model's coefficients estimate the change in price resulting from a unit change in a component characteristic, holding all else constant." Appraisal Inst., *The Dictionary of Real Estate Appraisal* 49 (5th ed. 2010).

characteristics and adds four additional spatial variables—latitude, latitude squared, longitude, and longitude squared. *Id.* at 34. Each run of the OLS or OLSXY model on a particular subject property draws on 100 to 2,000 comparable properties in each subject property's county (each with its own hedonic characteristics and associated sales prices) to calculate an estimated value for the subject property. When applied to a specific subject property, the OLS and OLSXY models estimate values that are very close to one another, except on rare occasions that were subsequently evaluated by Dr. Kilpatrick.[12] These values estimated by the two models are then averaged to produce the final estimate of value. *Id.* at 34.

The OLS and OLSXY models each drew on a set of 25 million potential comparable properties. These comparable properties were filtered for (i) missing required data (*e.g.*, sales price, sale date, reliable tax assessed data, longitude and latitude information); (ii) sales other than those for single-family residences or condominiums, (iii) sales before 2003 or after 2007; and (iv) sales coded as non-arm's-length or non-grant deed transactions. Ex. 46 (Accuracy Report App'x 5-1) at 21-23. Relative to the specific subject property being valued, filters were also applied to (i) remove comparable sales more than one year prior to the subject sale; (ii) remove sales that are not the same property type; and (iii) limit the total number of comparables to a maximum of the 2,000 geographically closest properties. *Id.* at 28-30.

C.   The Greenfield AVM's Cross-Validation Filter

Before Dr. Kilpatrick applied the Greenfield AVM to any of the subject properties, he ran a filter to ensure that the comparable properties used by the Greenfield AVM had sales prices that were adequately explained by the hedonic characteristics reported in the data used by the OLS and OLSXY models (a "Cross-Validation Filter"). To apply the filter, Dr. Kilpatrick first ran the OLS and OLSXY models on each comparable property, utilizing all the remaining comparable properties in the same county to estimate value. Ex. 45 (Accuracy Report) at 33-34.

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[12]   Any such outliers, where the models predicted significantly different values, were examined by Dr. Kilpatrick. Ex. 14 (Kilpatrick 7/1 Tr.) at 424:22-426:10.

If the predicted value of a comparable property turned out to be 25% or more different (*i.e.*, higher or lower) than the actual sales price, Dr. Kilpatrick concluded that the comparable property (i) was not the subject of an arm's-length transaction; (ii) was not being reported correctly (*i.e.*, was the product of errant data entry); or (iii) had hedonic characteristics that significantly influenced the sales price that either (a) were not observable based on the data available and/or (b) were not used by the OLS and OLSXY models. Ex. 45 (Accuracy Report) at 33-34; Lee Decl. ¶¶ 20, 26, 27 ("The C.V. filter does not filter on sales price alone."). Dr. Kilpatrick concluded that using such inappropriate properties as comparable properties would skew and bias his value estimates and, therefore, would be inappropriate and inconsistent with sound AVM practice. *See* Ex. 13 (Kilpatrick 6/30 Tr. at 37:4-38:4 (explaining that "there is a lot of data [regarding the comparable properties] here which is not suitable for this or any other AVM"), 294:12-296:6; Lee Decl. ¶¶ 14-17. Consequently, Dr. Kilpatrick limited his comparable dataset to comparable properties with an AVM estimated value within 25% of the reported sales price.[13] Ex. 45 (Accuracy Report) at 33-34. Ex. 46 (Accuracy Report App'x 5-1) at 33-34. As Nomura's expert, Dr. Hausman, conceded at deposition, there is nothing wrong with such a filter, as removal of outliers is necessary.[14] Ex. 7 (Hausman 7/30 Tr.) at 282:18-283:11.[15]

After applying the Cross-Validation Filter, Dr. Kilpatrick ran the OLS and OLSXY models using appropriate comparable properties, yielding the final value prediction for each

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[13]   Lee Decl. ¶ 19 ("Dr. Kilpatrick's C.V. filter is based on the PRESS residual. Conceptually, the PRESS residual is the difference between the sales price of a property and the AVM estimate of that property, provided that property is not used to create the model."); *id*. ¶ 20 ("Only those properties whose PRESS residual is less than 0.25 are retained and used to produce the subject property's Greenfield AVM. In this way, properties that have unusual hedonic characteristics for a given sale price would be removed. Conversely, properties with typical hedonic characteristics but atypical sales prices will also be removed.").

[14]   As Dr. Lee explains in his annexed declaration, and as is further detailed below, the Cross-Validation Filter does not bias Dr. Kilpatrick's analysis. Lee Decl. ¶ 24. Dr. Kilpatrick's results would materially change only if he improperly included properties whose sales prices were as high as 100% greater than their market assessed values—indicating that these properties were not arm's length transactions, were the result of errant data entries, or have substantial, negative, hedonic characteristics that are not captured or discernible in the data available. *See* Lee Decl. 27-28.

[15]   Dr. Kilpatrick applied the same Cross-Validation Filter in every FHFA case in which he issued a report, and in each case—including this one—he established the 25% threshold for the filter before he used the Greenfield AVM to value any subject property. Ex. 10 (Isakson 11/7 Tr.) at 112:3-14 ("A. [Dr. Kilpatrick] used a CV filter value of .25 consistently in all of the reports that I have seen.").

subject property for each of the two models. If only one model yielded a value, that value was

the final AVM value prediction for the subject property. If both the OLS and OLSXY models

yielded a value, their values (which on average differ by no more than 0.5%) were averaged to

yield the final value prediction. Lee Decl. ¶ 9. The estimated value and the variability around

that the estimate was then reported at various confidence levels, including 95%. Ex. 47

(Accuracy Report Appendix 6-1); Ex. 65 (Kilpatrick 10/6 Report App'x 5).

D. The Credibility Assessment Model ("CAM")

In his Credibility Report, Dr. Kilpatrick looked at each appraisal for which the Greenfield

AVM produced a value that was 15.1% or more lower than the original appraised value, to

determine if the original appraisal was "credible." In the appraisal context, "credibility" is a

term of art with a specific meaning: "those standards that any competent appraiser would have

been aware of and followed when performing appraisals for the Nomura properties, including

USPAP and other standards of practice applicable during the relevant time period." Ex. 41

(Credibility Report) at 17. Dr. Kilpatrick did not offer any opinion on the veracity or state of

mind of any individual appraiser.

To evaluate the credibility of the appraisals, Dr. Kilpatrick used a deterministic (not

statistical) scoring model referred to as the "CAM." Ex. 41 (Credibility Report) at 2-3. In a

deterministic scoring model, as Dr. Epley explained, "[i]mportant variables are identified, scores

are assigned, pertinent variables are assigned different weights to reflect their different

importance/priority, and the weighted scores are summed to provide numeric measures for

decision-making purposes." Ex. 48 (Epley Report) at 2 n.1.

The CAM scored the credibility of each relevant appraisal using a list of 31 questions,

which were based on fields in the URAR Form on which the original appraisal was prepared and

on requirements drawn from USPAP and applicable appraisal standards and practice.[16] The

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[16] The 31 questions are phrased to elicit yes or no responses based on a review of information on the appraisal
report and with reference to third-party sources. If a question is scored "no," then a point is given to the appraisal,
which is then multiplied by the respective weight of the question. The "total score" for an appraisal is tabulated as
the sum of all the "no" questions multiplied by their respective weighting. Ex. 41 (Credibility Report) at 65; Ex. 15
(Kilpatrick 7/14 Tr.) at 17:17-:18-3.

questions were scored and weighted based on various "aspects" and "categories" drawn from USPAP and appraisal practice and standards applicable at the time. Ex. 41 (Credibility Report) at 69-97. Dr. Epley confirmed that the 31 questions embodied the key issues by which credibility must be evaluated, Exs. 29-32 (Epley 10/30 Dep. Exs. 58101-58104); Ex. 5 (Epley 7/8 Tr.) at 172:6-173:11, and opined that Dr. Kilpatrick's priority and weighting of the questions was reasonable and appropriate. Ex. 48 (Epley Report) at 15-16; Ex. 5 (Epley 7/8 Tr.) at 85:3-88:4. Even Defendants' putative expert, Mr. Hedden, conceded that the questions were related to core sections of the URAR Form. *E.g.*, Ex. 8 (Hedden 11/21 Tr.) at 268:7-276:21; *see id.* at 110:12-111:8 (also conceding that he had done nothing to evaluate the aspects or categories by which the 31 questions were scored). The CAM thus allowed Dr. Kilpatrick to evaluate the credibility of the tens of thousands of sample loans at issue in the consolidated FHFA Actions in a consistent manner.[17]

Dr. Kilpatrick then established a CAM score above which the deviations from USPAP and applicable standards and practice were so gross that the appraisal could not be considered "credible." Ex. 41 (Credibility Report) at 98-100.[18]   Conservatively applying USPAP Standards Rules 1-1(b) and 1-1(c)—which establish that a major error or a collection of minor errors can render an appraisal not credible, Ex. 57 (USPAP) at 16—Dr. Kilpatrick set his threshold at 20, a score that reflected either (i) a combination of major CAM question failures or (ii) a combination of major CAM question failures as well as a number of minor CAM question failures. Ex. 41

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[17]   Dr. Kilpatrick regularly used the concepts behind the 31 questions in his prior appraisal reviews, although he did not specifically use the 31 questions, as worded, in that prior work. Ex. 41 (Credibility Report) at 3; Ex. 15 (Kilpatrick 7/14 Tr.) at 78:11-79:7.

[18]   As Defendants note, Dr. Kilpatrick described the formulation of his finding as the appraisal have such deviations from USPAP and standard appraisal practice that a reasonable appraiser adhering to USPAP and appraisal standards and practice applicable at the time could not, in Dr. Kilpatrick's professional opinion, have believed the appraisal to be credible. As FHFA does not believe this formulation is in any way improper, as discussed below, FHFA is, of course, prepared to adjust the formulation by which the opinion of gross deviation is presented to the jury in whatever way the Court instructs.

(Credibility Report) at 98-100.   Professor Epley confirmed that this threshold was reasonable and appropriate.   Ex. 5 (Epley 7/8 Tr.) at 184:16-185:6.[19]

E.   Recovco's Independent Validation Of Dr. Kilpatrick's Conclusions

Recovco Mortgage independently evaluated 202 appraisals to validate the results of Dr. Kilpatrick's CAM analysis. Ex. 41 (Credibility Report) at 104. Without any involvement from Dr. Kilpatrick or his staff, (Ex. 15 (Kilpatrick 7/14 Tr.) at 341:22-343:21), Recovco performed the appraisal reviews as it always does—its licensed appraisers performed a collateral review that evaluated the adherence of the original appraisals to USPAP and the Fannie Mae appraisal standards. Ex. 41 (Credibility Report) at 107. Recovco's analysis concluded that *95.54%* of the reviewed appraisals committed sufficient facial violations of USPAP and other industry standards such that their credibility was in serious doubt. *Id.* at 110.[20] In the handful of instances in which Recovco came to a different conclusion than did Dr. Kilpatrick, Dr. Kilpatrick evaluated the appraisal at issue. Ex. 44 (Credibility Report App'x 6-2) .[21]

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[19]   Given unrestricted time, Dr. Kilpatrick would have performed his full Greenfield AVM analysis before performing his CAM analysis, so that the Greenfield AVM could identify the subset of inflated appraisals that the CAM would then assess for credibility. Because both analyses were time-intensive, to ensure that Dr. Kilpatrick and his team could complete his work by the applicable deadlines, Dr. Kilpatrick performed the analyses in parallel. To do so, he used a "gating benchmark" to identify appraisals that he believed the Greenfield AVM would find to be inflated. The benchmark worked as follows: (i) dividing the approximately 25 million properties into two "buckets"—10% as the "holdout set" or "benchmark subjects," and 90% as "meta comparables" or the "training set," Ex. 45(Accuracy Report) at 47-48; Lee Decl. ¶ 11; (ii) filtering to identify benchmark subjects that would be single-family residences bought through arms-length transactions, *id.*; (iii) analyzing the remaining properties to determine the forecast standard deviation ("FSD")—the average percentage difference between the benchmark subject sales prices and their estimated value as estimated by the Greenfield AVM, *id.*; and (iv) using the resulting FSD of 0.151 to identify properties that would be submitted to the CAM, *id.* This gating validation benchmark did not have any bearing on the value estimates produced by the AVM methodology. Lee Decl. ¶ 7; Ex. 13 (Kilpatrick 6/30 Tr) at 184:5-185:9; *see also* Ex. 17 (Kilpatrick 11/13 Tr.) at 145:22-146:6 ("What was the purpose of calculating the forecast standard deviation or the FSD of the Greenfield AVM? A. Well, it's a gating mechanism, if you will, that allows me to determine which of the original appraisals should be investigated for credibility.").

[20]   Although the criteria reviewed by Recovco were similar in substance, they were not coextensive with the criteria used in the CAM. Ex. 41 (Credibility Report) at 103-104.

[21]   Dr. Kilpatrick examined the appraisals Recovco deemed most likely to be credible and found that disagreement between the CAM and Recovco related large to issues of scope: i.e., neither review accounted for all conceivable measures of credibility and each had findings not examined in the other. Ex. 44 (Credibility Report App'x 6-2).

ARGUMENT

"Rule 702 embodies a liberal standard of admissibility for expert opinions, representing a departure from the previously widely followed, and more restrictive, standard of *Frye v. United States.*" *Nimely v. City of New York*, 414 F.3d 381, 395-96 (2d Cir. 2005) (internal citations omitted); *see Daubert v. Merrell Dow Pharmaceuticals, Inc.,* 509 U.S. 579, 588 (1993). Determining the admissibility of expert testimony under Rule 702 and *Daubert* requires a district court to "determine that (1) the expert is qualified, (2) the testimony is relevant, and (3) that the testimony is reliable." *Wald v. Costco Wholesale Corp.*, No. 03 Civ. 6308, 2005 WL 425864, at *5 (S.D.N.Y. Feb. 22, 2005) (citing *Daubert*, 509 U.S. at 592-97 and Fed. R. Evid. 702).

The Court's inquiry into the reliability of an expert's method focuses "not on the substance of the expert's conclusions, but on whether those conclusions were generated by a reliable methodology." *Trouble v. Wet Seal, Inc.,* 179 F. Supp. 2d 291, 301 (S.D.N.Y. 2001). "The district court's inquiry into the reliability of expert testimony is flexible," and "[t]he trial judge has great latitude not only in deciding whether an expert's testimony is reliable, but in deciding how to make that inquiry." *Olin Corp. v. Certain Underwriters at Lloyd's London*, 468 F.3d 120, 133 (2d Cir. 2006). Such an inquiry may include: (i) whether the method can be tested; (ii) whether the theory or technique has been subject to peer review and publication; (iii) whether the theory or technique has been generally accepted by the expert community; and (iv) the known or potential error rate of the theory or technique. *Daubert*, 509 U.S. at 593-94.

However, "[t]o the extent Defendants have any questions about the weight or the sufficiency of the evidence upon which [the expert] relied, or the conclusions generated therefrom, those questions can be asked on cross-examination." *Discover Fin. Servs. v. Visa U.S.A., Inc.*, 582 F. Supp. 2d 501, 507 (S.D.N.Y. 2008); *see Olin Corp.*, 468 F.3d at 134 (affirming district court's decision to admit expert testimony where the district court, "[r]ather than selectively excluding the portions of [the expert's] testimony that the court thought were not well supported, the judge considered the testimony as a whole"). Similarly, "claims 'that the assumptions relied on by an expert are unfounded is generally an argument that goes to the

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weight rather than the admissibility of the evidence.'" *Arista Records LLC v. Lime Group LLC*, 2011 WL 1674796, at *3 (S.D.N.Y. May 2, 2011) (internal citation omitted).   "As the Supreme Court stated, '[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means" of assessing the value of admissible expert testimony. *Id.* (citing *Daubert,* 509 U.S. at 596).

I.   DR. KILPATRICK'S "CREDIBILITY" OPINION IS NOT "STATE OF MIND" TESTIMONY—IT IS CLASSIC STANDARD-OF-CARE OPINION TESTIMONY

As discussed, *see* Part II.B, *infra*, and as Defendants know, "credibility" is a term of art used in describing appraisal standards—it refers to "those standards that any competent appraiser would have been aware of and followed when performing appraisals for the Nomura properties, including USPAP and other standards of practice applicable during the relevant time period." Ex. 41 (Credibility Report) at 17. Based on his CAM methodology, Dr. Kilpatrick offers classic standard-of-care testimony about the degree to which certain Nomura Appraisals deviated from USPAP and applicable appraisal practice. *Id.* at 101-103. From evidence that an appraisal deviated substantially from these standards—that it was not objectively "credible"—the jury can reasonably infer that the appraiser did not believe that the appraisal was accurate at the time it was made. Dr. Kilpatrick's testimony is thus highly relevant to the question of subjective falsity.[22] *See Virginia Bankshares, Inc. v. Sandberg*, 501 U.S. 1083, 1092-93 (1991) (proof of subjectively disbelieved opinion includes "circumstantial evidence bearing on the facts that would reasonably underlie the reasons claimed and the honesty of any statement that those reasons are the basis for a recommendation or other action"); *see also Fait v. Regions Fin. Corp.*, 655 F.3d 105, 111 (2d Cir. 2011) (applying *Virginia Bankshares* to Sections 11 and 12(a)(2)).

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[22] Defendants do not address at all the relevance of Dr. Kilpatrick's opinions to whether Defendants themselves believed the appraisals at issue. "Subjective falsity is established where either the appraiser *or the person who reported the appraiser's opinion* did not honestly believe the appraisal value." *Homeward Residential, Inc. v. Sand Canyon Corp.*, No. 13 Civ 2107, 2014 WL 2510809, at *11 (S.D.N.Y. May 28, 2014) (emphasis added) (citing *FHFA v. UBS Ams. Inc.*, 858 F. Supp. 2d 306, 326 (S.D.N.Y. 2012)); *see also id.* at 327 ("[I]t is entirely appropriate to impose on [underwriters] the obligation to vet the accuracy of opinion statements attributed to third parties."); *In re Bear Stearns Mortg. Pass–Through Certificates Litig.*, 851 F. Supp. 2d 746, 769 (S.D.N.Y. 2012) ("Because the appraisal 'opinions' were expressed by both the originators and [the underwriter] (by incorporating the originators' representations into the Offering Documents), Plaintiffs can state a claim by showing that *either one* disbelieved the appraisal amounts.") (emphasis added).

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Contrary to Defendants' assertions, Dr. Kilpatrick does not opine about individual appraisers' "credibility" and he does not try to describe any appraiser's state of mind. Mot. 1-2, 11-17. In *42 hours* of deposition, Dr. Kilpatrick was asked repeatedly if he was opining on the state of mind of individual appraisers, and he testified in no uncertain terms that he had no opinion about whether any appraiser subjectively believed a specific opinion of value.[23] Consequently, the authorities relied on by Defendants—which stand for the unsurprising proposition that an expert cannot opine on a witness's truthfulness, motive, or intent—do not implicate Dr. Kilpatrick's opinion in any way. *See Nimely*, 414 F.3d at 397-98 (excluding expert's opinion that police officers were "telling the truth" in their account of a violent encounter); *In re Rezulin Prods. Liab. Litig.*, 309 F. Supp. 2d 531, 546-47 (S.D.N.Y. 2004) (excluding testimony about defendant's motive and intent concerning removal of pharmaceutical product from the market); *Highland Capital Management L.P. v. Schneider*, 551 F. Supp. 2d 173 (S.D.N.Y. 2008) (excluding testimony of expert who opined that "[c]learly on that date [the defendant] *believed* that the value of these two issues of SPNs was a deeply discounted price.") (emphasis added).[24]

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[23] *See, e.g.*, Ex. 17 (Kilpatrick 11/13 Tr.) at 115:24-116:14 ("I'm not personifying this work. I am simply making the statement that if that appraisal has a sufficient number of errors in it . . . some egregious, some not, then that appraisal cannot be believed. It's not credible. . . So I'm not making judgment calls about the individual appraisers."), 196:6-197:2 ("Q. And so what you're effect—in effect saying is that the appraisers who performed those appraisals violated their ethical obligations under USPAP by communicating an appraisal they knew to be misleading or fraudulent; correct? A. I don't know that I went that far. I think that a reasonable appraiser, a—a—a good appraiser would not have believed these—these values. Now, whether you guys hired reasonable appraisers or not to do this work, I haven't measured that. In other words, I haven't tried to get inside the heads of these appraisers and I've not—I'm not talking about appraisers or the original appraisers per se. I'm simply saying that a reasonable appraiser or a user of these appraisal reports could not have believe it."); Ex. 15 (Kilpatrick 7/14 Tr.) at 222:18-24 ("Q. Do you believe it was possible for appraisers to resist the pressure and . . . opine a value that they believed in? A. I'm not going to try to get in the heads of these appraisers. I did not do this work."); Ex. 13 (Kilpatrick 6/30 Tr.) at 153:21-156:19 ("I also don't try to get myself in the heads of the appraisers who were issuing opinions which fail the credibility analysis. What I do say is that a reasonable appraiser adhering to appraisal standards and generally accepted appraisal methodology at the time these appraisals were issued could not have believed them if indeed they failed both the AVM and the CAM-driven test.").

[24] Nor is, as Defendants suggest, Dr. Kilpatrick offering a legal conclusion. *See* Mot. 15. In discussing whether a "reasonable appraiser" could have found the Nomura Appraisals credible, Dr. Kilpatrick is opining as to the gross nature of the deviation from standards and practice evidenced by the appraisals, not whether the appraisers were legally negligent in their practice. *Cf. In re Rezulin*, 309 F. Supp. 2d at 547 (excluding expert opinion that defendant's conduct "constituted 'negligence'"). FHFA is, of course, prepared to proffer Dr. Kilpatrick's CAM

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II.   THE CAM IS FULLY RELIABLE AND DEFENDANTS' MERITLESS ATTACKS
        AGAINST IT GO TO WEIGHT

Defendants raise issues that, at best, go to the weight the jury should afford

Dr. Kilpatrick's opinions based on his CAM methodology, not to the admissibility of his

opinions. *See In re Joint E. & S. Dist. Asbestos Litig.*, 52 F.3d 1124, 1135 (2d Cir. 1995)

(finding that disagreement with expert's conclusion not basis for exclusion, but "a classic

question for the jury").

        A.   The CAM Is Reliable And Has Been Independently Validated

Defendants do not dispute that the CAM's framework—its scoring model—is a widely

accepted method for producing an integrated assessment of multiple quantitative factors. As

Dr. Epley opined, scoring models are "acceptable form[s] of model well-established both in the

scholarly research literature and in professional practice," which gives them weight in the

Court's *Daubert* analysis. Ex. 48 (Epley Report) at 2; *see Daubert*, 509 U.S. at 594

("Widespread acceptance can be an important factor in ruling particular evidence admissible.").

For example, Fair Isaac Corporation uses a credit model to tabulate individuals' FICO scores—

which Nomura witnesses considered a crucial factor in a borrower's credit risk, *see* Ex. 22

(Marvin 11/19 Tr.) at 151:10-152:23; Ex. 2 (DePalma 11/15 Tr.) at 179:24-180:6—by assigning

weights to categories such as payment history, installment and revolving loan history, and credit

card use. *See In re Countrywide Financial Corp. Sec. Litigation*, 588 F. Supp. 2d 1132, 1146

(C.D. Cal. 2008). The CAM utilizes this same, logical, approach and methodology.[25]

        While Defendants assert that the CAM has not been "independently validated" or

"independently tested," Mot. 12, that assertion is demonstrably untrue. Dr. Epley validated the

CAM's methodology, opining that the 31 questions asked by the CAM were appropriate and

methodology opinions concerning the degree to which the appraisals deviated from USPAP and applicable appraisal
standards and practice to the jury in whatever formulation the Court directs.

[25]   Several products like the CAM exist on the market, and have for nearly a decade, including products from
InterThinx, FNC, and CoreLogic. *E.g.*, Ex. 19 (Lucco 8/12 Tr.) at 183:2-21 (FNC product at least ten years old); *id.*
at 184:6-185:01 (InterThinx); Ex. 5 (Epley 7/8 Tr.) at 474:12-475:8 (CoreLogic). But none of these "industry"
credibility models makes its code available for review. *See* Ex. 19 (Lucco 8/12 Tr.) at 179:14-181:14. Here, Dr.
Kilpatrick has made his code available, so that Defendants can see and test any and all aspects of the CAM
methodology.

grounded in USPAP and other appraisal practice and standards applicable at the time and that the

questions were appropriately prioritized and weighted. Exs. 29-32 (Epley 10/30 Dep Exs.

58101-58104); Ex. 5 (Epley 7/8 Tr.) at 85:3-88:4, 172:6-173:11, 184:16-185:6; Ex. 48 (Epley

Report) at 15-16. Defendants do not question Dr. Epley's opinions validating the source of

weighting and priorities of Dr. Kilpatrick's 31 questions—not even in their *Daubert* motion to

exclude him. Ex. 8 (Hedden 11/21 Tr.) at 111:12-111:8. Recovco then validated the CAM's

results, independent of Dr. Kilpatrick's oversight, Ex. 15 (Kilpatrick 7/14 Tr.) at 341:22-343:21;

Ex. 41 (Credibility Report) at 105, and determined that 99.5% of the appraisals in its review

deviated from USPAP and industry standards set by Fannie Mae and Freddie Mac guidelines.

Ex. 41 (Credibility Report) at 103-104. The Recovco analysis also confirmed that 95.54% of the

appraisals in the Recovco sample contained multiple significant errors and were "weak," lacking

credibility. *Id.* at 110. The validation of the CAM by both Dr. Epley and Recovco is more than

sufficient to demonstrate its reliability. *See, e.g.*, *James v. Tilghman*, 194 F.R.D. 402, 407 (D.

Conn. 1999) (authorizing first expert to testify as "a validation of [second expert's]

methodology, without duplicating the conclusions reached by [the second]").[26]

B.   The CAM Questions are Based in Well-Established USPAP and Appraisal Standards

Defendants argue that the CAM's 31 questions are invalid because USPAP does not

contain those questions verbatim, Mot. 20-22, but, as Defendants know, USPAP dictates

principles, not individual practice prescriptions,[27] and that the application of USPAP in evaluated

by, among other things, fully and accurately filling out the Uniform Residential Appraisal Report

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[26] Defendants' citation to *In re TMI Litig.*, 193 F.3d 613 (3d Cir. 1999), is wholly inapt. Mot. at 19-20. There, the proffered expert devised six "parameters" to assess whether radiation caused certain persons' cancer. *Id.* at 702-03. The proffered expert's failure to explain how he scored and weighted his "parameters" left the court "at a loss" to understand the expert's method. *Id.* at 703. Not so here: (i) the CAM methodology is not ungrounded *ipse dixit*, but rather a species of an accepted type of deterministic model; (ii) Dr. Kilpatrick's 31 questions are well-grounded in established appraisal standards and practice and were validated by Dr. Epley; and (iii) the CAM's findings were validated by Recovco's experienced appraisers.

[27] *E.g.,* Ex. 5 (Epley 7/8 Tr.) at 259:19-260:8 ("Q. Is that 20 to 30 percent found anywhere in USPAP? A. No, it's not. And the […] reason is that USPAP is not designed, it was never written to contain numbers. There is an exception to that which has to do with the history of the subject. But in terms of 10 percent, 20 percent, 30 percent, you won't find them explicitly written in USPAP because it wasn't the intent of that document to have them there.").

("URAR") form. Consistent with USPAP, the URAR form requires the appraiser to provide and analyze all the information necessary to complete the form for each and every appraisal performed. Ex. 62 (URAR) at 5.

As Dr. Kilpatrick and Professor Epley explained, the substance of each of the 31 CAM questions appears in the URAR Form, in USPAP, or in standard appraisal review forms that are used to evaluate the credibility of appraisals based on the information set forth in the URAR Form.[28] Ex. 41 (Credibility Report) at 28-37; Ex. 17 (Kilpatrick 11/13 Tr.) at 211:12-212:13 ("In other words, each one of these questions, which is formulated based on how I as a USPAP instructor would teach and evaluate real estate appraisal, each one of these has its basis in USPAP and each […] one of these questions derives from a violation of USPAP"); Ex. 6 (Epley 10/30 Tr.) at 91:5-15; Ex. 5 (Epley 7/8 Tr.) at 172:6-173:11.[29] Defendants received materials showing how the CAM mapped to USPAP, Exs. 29-32 (Epley 10/30 Dep. Exs. 58101-58104), Dr. Epley explained that mapping in detail, Ex. 48 (Epley Report) at 3-4, 11, 13-14, and Nomura's own putative expert, Mr. Hedden, conceded that the vast majority of the CAM questions are based on valid appraisal considerations, including that:

- The property being appraised should be accurately identified (Question 1). Ex. 8 (Hedden 11/21 Tr.) at 313:19-314:25.

- Appraisers are required to accurately report listing history (Question 2). *Id.* at 172:22-173:8, 310:5-20.

- Appraisers should analyze the appraised value in comparison to prior listing prices and sales prices of the subject property. (Questions 3, 4, 13, 21). *Id.* at 192:23-193:16, 219:25-220:14.

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[28] In practice, the vast majority of appraisals are performed on form reports promulgated by the GSEs—all the Nomura subject sample appraisals were on these form reports. The most common for single-family residences is the Fannie Mae 1004 or URAR. These forms contain numerous fields related to the subject property, the neighborhood, the market, the and comparable properties to the subject. When an appraiser performs an appraisal on a URAR she certifies that she "performed this appraisal in accordance with the requirements of the Uniform Standards of Professional Appraisal Practice that were adopted and promulgated by the Appraisal Standards Board of The Appraisal Foundation and that were in place at the time this appraisal report was prepared." Ex. 62 (URAR).

[29] Defendants' citation to Professor Epley and Dr. Kilpatrick concurring the CAM questions do not appear verbatim in USPAP are overt misquotations, entirely omitting surrounding discussion of why the questions are relevant to credibility.

- Appraisers are required to report and analyze any available sales contracts (Questions 5 and 6). *Id.* at 195:18-25, 196:2-15, 315:2-9.

- Appraisers should report supply/demand correctly (Question 7). *Id.* at 198:14-199:24.

- Appraisers should analyze and report property value trends correction (Question 8). *Id.* at 203:24-204:15.

- Appraisers should analyze and report marketing time correctly (Question 9). *Id.* at 207:23-208:14.

- Appraisers are required to accurately report and analyze the sales history of the subject and comparables (Questions 11 and 12*Id.* at 216:25-217:21, 323:20-323:16, 300:16-301:7.

- Appraiser should analyze land value ratio of property (Question 14). Ex. 8 (Hedden 11/21 Tr.) at 331:5-333:18.

- Appraisers are should use cost approach for non-condominium properties or explain why it is inappropriate to do so (Question 15). *Id.* at 221:22-222:24.

- Appraiser should analyze and report external obsolescence correction (Question 17). *Id.* at 319:24-322:7.

- Appraisers should correctly report comparable sale transaction data (Question 20). *Id.* at 242:13-20.

- Appraisers should use comparables with credible sales prices relative to their prior sales, if known (Question 21). *Id.* at 244:12-24.

- Bracketing appraisal value with comparable sales is the generally preferred method (Questions 22 and 23). *Id.* at 245:22-247:5.

- Appraiser must properly perform income approach to value (Questions 24, 25, 26). *Id.* at 322:20-323:16.

- Appraisers should select appropriate comparables for performing the sales comparison approach to value (Questions 27, 28, 29, 30, 31). *Id.* at 322-8-19, 301:8-15.[30]

There is, thus, no serious question that the 31 questions are based on USPAP and

appraisal practice and standards. Even if there were, the Second Circuit has repeatedly held that

questions over the "textual support [for an expert's opinion] may 'go to the weight, not the

admissibility' of his testimony." *Amorgianos v. Nat'l RR. Passenger Corp.*, 303 F.3d 256, 267

(2d Cir. 2002) (quoting *McCullock v. H.B. Fuller Co.*, 61 F.3d 1038, 1044 (2d Cir. 1995)).

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[30]   Many of Mr. Hedden's concessions relate to specific, USPAP Standards Rule 3 appraisal review forms used in the industry that contain the same types of considerations evaluated by the CAM. *See, e.g.*, Exs. 33-35 (Hedden 11/21 Dep. Exs. 62104-62106).

Indeed, another court in this District confronted a nearly identical *Daubert* challenge to an

appraisal expert's methodology, which the moving party described as being contrary to "The

Bible of Real Estate" and "disapprove[d] of what [the expert] did at every turn." *Cullen v.*

Village of Pelham Manor, No. 03-CV-2168, 2009 WL 1507686, *18 (S.D.N.Y. May 28, 2009),

at *18 (quotation marks omitted). As Judge Seibel concluded, notwithstanding that this was "at

least an overstatement," "[the expert's] reliance on sales of nearby properties, which were in

some material respects unlike the [subject property], did not sufficiently undermine the reliability

of his report as to render it inadmissible." *Id.* Defendants' argument should be treated the same

way.

C.   The CAM Questions Are Conservative and Inherently Flexible

Defendants' criticisms of specific CAM questions are meritless. To start with, as shown

supra, Part II.B Dr. Kilpatrick based the questions on USPAP and governing standards, and

Defendants' disagreement with the details of his approach go to the weight of his opinion about

how to interpret those standards, not to its admissibility. *See In re Joint E. & S. Dist. Asbestos*

Litig., 52 F.3d at 1135.[31] That Defendants' attacks are not suitable for *Daubert* practice is

underscored by the fact that they are based primarily on the opinions of their own purported

expert, Mr. Hedden, who spent less than 1% of his time in the last decade dealing with

residential appraisals and evidenced a startling ignorance and lack of interest in how the CAM

methodology actually works at his deposition.[32] Moreover, even if Dr. Kilpatrick accepted that

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[31]   Defendants' misleading attempt to cite Professor Epley throughout its argument as stating that USPAP does not require specific numbers or methods fail to acknowledge that Professor Epley repeatedly testified that the CAM questions and thresholds were appropriate interpretations of relevant appraisal standards and practice. *E.g.*, Ex. 6 (Epley 10/30 Tr.) at 140:8-147:6.

[32]   Ex. 8 (Hedden 11/21 Tr.) at 95:19-96:6 ("Residential valuation I would say would probably comprise, if I had to estimate, you know, 10 percent of the work [over the past eleven years]."); *id.* at 96:7-98:2 ("…what percentage of the 10 percent do you believe is made up of work over the last eleven years regarding multifamily or development? A. It would be, you know, 90 percent of the 10 percent. Q. And of the one percent that's left now, 90 percent of 10 being one percent, what's that one percent made up in the residential space? What kind of work are we talking about here? A. Well, it would be what we've alluded to, which is this, you know, house appraisal."); *id.* at 184:12-20 ("And do you think that it's -- in criticizing the CAM methodology don't you think, sir, that it was important to understand how the CAM code and actual methodology worked in evaluating whether the questions were appropriate or inappropriate, from your point of view? A. No.").

all of the specific CAM questions that Mr. Hedden criticizes were incorrectly scored, the vast

majority of the appraisals Dr. Kilpatrick found to lack credibility would still lack credibility

under his CAM methodology. Ex. 8 (Hedden 11/21 Tr.) at 75:16-76:15.

Defendants also fail to show that any specific questions are unreliable:

Numeric Thresholds. While Defendants criticize CAM questions 4, 13, 14, and 21 as

setting "strict numeric thresholds," Mot. 22-25, they misunderstand Dr. Kilpatrick's

methodology for questions 13 and 21. Defendants characterize these questions as asking if an

appraisal is more than 10% higher than its most recent sale, but they actually ask if the appraisal

is 10% higher than the average annual increase over the past three years, Ex. 42 (Credibility

Report App'x 4-1a) at 16-17, 20-21, and Defendants do not explain why the actual questions are

problematic. For question 14, Defendants' own putative expert, Mr. Hedden, conceded that Dr.

Kilpatrick's 30% threshold for land value ratio was supported by professional standards. Ex. 8

(Hedden 11/21 Tr.) at 331:5-333:18 (confirming 30% land value ratio included in review forms

and discussed "amongst professionals"); Ex. 8 (Hedden 11/21 Dep. Ex. 62106) at 3 ("If the site

value opinion exceeds 30% of the appraised value, has the appraiser addressed?"). And for

question 4, which deals with increasing appraisal values, Mr. Hedden failed to provide a basis for

his criticism of Dr. Kilpatrick's threshold.[33] Finally, Defendants overlook that the CAM model

is based on 31 questions, and for the vast majority of them, even though "under USPAP an error

is an error" and it "[d]oesn't matter whether it's intentional or unintentional," Dr. Kilpatrick

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[33]   Mr. Hedden relies solely on the Case-Shiller Home Price Index for his opinion that it is improper to raise issue with appraisals that reflected more than 10% annualized growth , given that annual growth of 10% or more was purportedly common. Ex. 8 (Hedden 11/21 Tr.) at 161:16-162:5. But at deposition Mr. Hedden conceded he had no personal knowledge of allegedly hot markets, and that even the data he used showed few instances of markets with growth above 10%. *Id.* at 163:21-164:11, 164:18-165:5, 165:6-166:13. Defendants ignore that Mr. Hedden's opinion relies solely on 2005 data for opinions that purport to span markets from 2005 through 2007. Of the 205 properties scored by the CAM, 68 scores were for appraisals performed in 2005 and 137 were for appraisals performed in 2006. Kilpatrick Decl. ¶ 4. Examining that data while looking at the correct years, only 7 subject properties actually appraised in 2005 were even located in the markets Mr. Hedden cites as "experiencing double-digit appreciation." Kilpatrick Decl. ¶ 11. By 2006, only two of the markets Mr. Hedden cites were still experiencing growth at or just above 10%, two markets were stable, and seven markets were in fact *depreciating*. Kilpatrick Decl. ¶ 8. There were only two appraisals from 2006 that failed any CAM question related to annual growth that were also located in markets appreciating at or above 10%. Kilpatrick Decl. ¶ 12.

nonetheless gives appraisers the benefit of the doubt on minor disagreements. Ex. 17 (Kilpatrick 11/13 Tr.) at 220:23-25.[34] In sum, Defendants fail to establish that these four questions make the CAM methodology inflexible or unreliable.[35]

Comparables. While Defendants criticize questions 29-31 for purportedly using comparable properties in a way that prevents a property from being more desirable than other homes on the market, Mot. 25-27, they base this attack solely on the opinions of Mr. Hedden, who admitted that he did not know how Dr. Kilpatrick scored these questions. Ex. 8 (Hedden 11/21 Tr.) at 260:2-18 ("You don't know what his methodology was, sitting here today? A. No."). In fact, to determine if an appraisal was inflated based on non-comparable properties, the CAM used information derived from up to nine comparable properties in the neighborhood as defined by the original appraiser. Ex. 16 (Kilpatrick 7/15 Tr.) at 72:16-73:11; Ex. 43 (Credibility Report App'x 4-2). The CAM compared the average of each relevant characteristic from these comparable properties to the characteristic of the purportedly comparable properties identified in the appraisal—the appraisal failed this comparison only if the average of the originally-selected comparable properties was higher than the average of the newly-selected comparable properties. Ex. 16 (Kilpatrick 7/15 Tr.) at 69:21-70:3. This methodology is entirely consistent with the URAR requirement that selected comparables be "locationally, physically and functionally the most similar to the subject property." Ex. 62 (URAR) at 5.

Market Conditions. While Defendants assert that questions 7, 8, and 9—which are derived directly from the URAR form—improperly assess if an appraisal reported something

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[34] For example, Question 16 allowed a $2,000 range of divergent values to still pass. Ex. 60 (Physical Dep. Protocol). Question 17 counted *any* mention of external obsolescence, even if vaguely described and not factored into the value conclusion. Ex. 59 (External Obsolescence Protocol).

[35] Mr. Hedden apparently opted to remain ignorant of how the 31 CAM questions were scored based on the straightforward model that was available for them for months. Ex. 8 (Hedden 11/21 Tr.) at 184:12-20 ("[I]n criticizing the CAM methodology don't you think, sir, that it was important to understand how the CAM code and actual methodology worked in evaluating whether the questions were appropriate or inappropriate, from your point of view? A. No."). Mr. Hedden also wholly failed to understand how the CAM actually scored appraisals and believed the wording of the questions themselves to be issue dispositive. *E.g.*, *id.* at 167:14-168:11. That Mr. Hedden chose to provide his own subjective, superficial, and literal application of the CAM methodology's 31 questions rather than determine how, in fact, those questions were answered based on a carefully formulated protocol makes Defendants' expert's opinions, not Dr. Kilpatrick's CAM methodology, unreliable.

"correctly," Mot. 27-29, Defendants mischaracterize the questions. The distinction between "correct" and "incorrect" reporting is well-supported by established appraisal standards as a general matter, and the specific questions at issue here provide leniency for appraisers not even granted by USPAP and do not specify a particular method by which the appraiser should arrive at his answer. Ex. 17 (Kilpatrick 11/13 Tr.) at 228:5-229:13. For question 7, which asked if the appraisal correctly reported supply and demand given the state of the market, the appraisal failed only if it was incorrect by a magnitude of ten—an appraisal reporting in balance supply/demand did not fail even if the CAM determined that withdrawals outpaced sales at a rate of nine to one. Ex. 17 (Kilpatrick 11/13 Tr.) at 230:20-232:5, 232:6-233:2, 233:3-8. Similarly, question 8, which asked if the appraisal correctly reported the property's value trend, was evaluated with a +/-4% variance, grounded in empirical price trend data demonstrating that prices generally increase approximately 2% annually (plus inflation), *id.* at 240:14-241:10—the appraisal did not fail 8 unless it exceeded that variance.[36] *Id.* at 244:2-18. Question 9, which asked if marketing time was reported correctly, defers to the market area as defined by the appraiser in the original report in the CAM's calculation of market time. *Id.* at 256:4-19.

Other Questions. Defendants remaining specific attacks also fail. Mot. 29-31. For questions 16 and 17, Defendants overlook explicit instructions on checking the math in the physical depreciation calculation and identifying external obsolescence. Ex. 60 (Phys. Dep. Protocol); Ex. 59 (External Obsolescence Protocol). An appraisal failed question 16 when the result was illogical, Ex. 18 (Kilpatrick 11/14 Tr.) at 289:16-294:14, and failed question 17 when an appraiser outright failed in his obligation to report negative influences on the value of the property. *Id.* at 295:23-297:7. Defendants in fact agree that question 12 operated appropriately when they contend "USPAP only requires the appraiser to 'analyze all sales of the subject property that occurred within three (3) years prior to the effective date of the appraisal.'" Mot.

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[36]   Strictly speaking, any non-zero value trend renders an appraisal reporting "stable" incorrect. Ex. 17 (Kilpatrick 11/13 Tr.) at 244:2-18.

30. That is precisely the time period used by the CAM methodology.[37] Ex. 61 (Subject History Protocol) at 1 ("Sales more than 3 years prior should be ignored.").

D.   The CAM Weightings are Based on Appraisal Standards and Practice

Defendants assertion that Dr. Kilpatrick's method of weighting the CAM questions was "arbitrary," Mot. 31-32, is based solely on the opinion of Mr. Hedden, who admitted that his disagreement was merely a difference of opinion between experts, Ex. 8 (Hedden 11/21 Tr.) at 117:6-10, 114:6-23. This, by itself, confirms that Dr. Kilpatrick's opinions on this topic are not suitable for exclusion at the *Daubert* stage. *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 856 (Fed. Cir. 2010) (allowing expert testimony over objection that other or better methods were available and noting such objections are best made during cross-examination with contrary evidence). Defendants' argument is also meritless. Each of the aspects and categories used to weight and prioritize the CAM questions was drawn from USPAP and other longstanding appraisal standards. Ex. 41 (Credibility Report) at 28-37; Ex. 6 (Epley 10/30 Tr.) at 140:8-147:6.[38] Dr. Epley performed independent sensitivity testing of the CAM with various weightings and found that the percentage of appraisals found non-credible did not change substantially, Ex. 5 (Epley 7/8 Dep. Ex. 54505), demonstrating the reliability of the CAM's weightings. *See, e.g.*, Ex. 28 (Epley 7/8 Dep. Ex. 54505). That the CAM showed significant deviations does not show that the weightings were incorrect, Mot. 31—it shows that large numbers of appraisals seriously deviated from USPAP and applicable appraisal standards, which is consistent with Recovco's independent analysis, Ex. 41 (Credibility Report) at 102, 117-119,

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[37]   Mr. Hedden again demonstrated his complete failure to analyze the CAM methodology in believing questions related to sales history to include all prior sales from the beginning of time despite an express three-year cutoff. Ex. 8 (Hedden 11/21 Tr.) at 216:12-24.

[38]   By setting a threshold for credibility based on a collection of both major and minor errors, Ex. 41 (Credibility Report) at 98-100, Dr. Kilpatrick's weighting system was fully consistent with USPAP's prohibition on appraisals containing "a series of errors that . . . in the aggregate affects the credibility of those results"—a prohibition Defendants ignore, *see* Mot. 34 ("Standard 1 states only that the appraisers must 'not commit a substantial error of omission or commission that significantly affects an appraisal'").

and with the uniform testimony by appraisers subpoenaed by Defendants that they felt significant

pressure to inflate their appraisals in 2005-2007.[39]

E.   Prior Litigation Results Do Not Make The CAM Unreliable

Defendants' final argument regarding the CAM concerns allegedly inconsistent scoring

for two appraisals. *See* Mot. 34-36. Those appraisals are not at issue in this case—they were at

issue only in the *Goldman Sachs* action—and Dr. Kilpatrick corrected those errors in a

supplemental report in that case, which Defendants misleadingly fail to mention.[40]   These

corrected errors in another case is no basis to exclude Dr. Kilpatrick's testimony here. *See, e.g.*,

Alfa Corp. v. OAO Alfa Bank, 475 F.Supp.2d 357, 360 (S.D.N.Y. 2007) ("'A minor flaw in an

expert's reasoning or a slight modification of an otherwise reliable method will not render an

expert's opinion per se inadmissible.'" (quoting *Amorgianos*, 475 F. Supp. 2d at 267)).

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[39]   *See, e.g.*, Ex. 24 (Paul 5/9 Tr.) at 85:14-86:11 ("Did -- has another appraiser ever told you that they felt pressure to hit a number in an appraisal? A. In this time period, yes. Q. And can you tell me the circumstances of that? A. I had an acquaintance who was told flat out by a mortgage broker if he didn't' start playing ball, he wasn't going to see any of his work again. Those kind of things did happen. … Q. And do you know the results of any of those conversations? Do you know of an occasion where a bank did stop providing business because they felt an appraiser wasn't, quote, 'playing ball'? A. At that time period, yes."); Ex. 1 (Demopulos 5/21 Tr.) at 182:2-8 ("Q Has another appraiser […] in conversation with you ever said I'm feeling pressure to hit this specific number, or something to that effect. […] A Yes."); Ex. 21 (Mandigo 4/28 Tr.) at 36:25-38:2 ("Q. Okay. Have you ever felt that you were under pressure to prepare an appraisal report a certain way? A. I would say that there was a bit of pressure during that time period from certain loan officers, but I wouldn't -- I would not work with them. I only worked with people that had integrity."); *id.* at 116:22-117:18 ("What do you -- so what do you understand this appraisers petition to be? A. Against loan officers pressuring appraisers; real estate agents, loan officers, basically to enforce to order from you anymore. [….] What raised concerns during that time period is if you were going to lose business because you didn't do what they wanted to do. Q. So the concern among appraisers was that if you didn't do what the loan officer wanted you to do, then the appraisers were at risk of losing business. Is that fair? A. That is fair."); *id.* at 118:5-120:2 ("Q. And do you agree that action needed to be taken to prevent this type of violation? A. I agree that it was getting out of hand for certain loan officers. Q. Can you elaborate on what you mean a little bit by "it was getting out of hand for certain loan officers"? A. Well, they would -- I mean, during this time period, you know, certain loan officers at certain companies would ask for a target value more often than they should.."); Ex. 4 (Duran 4/30 Tr.) at 122:8-25 ("Q. Between 2004 and 2008 …. [w]as Ocwen aware of any pressure that was being put on residential appraisers of any shape or form? A. Yes. Q. Can you describe the kinds of pressures that Ocwen recalled being aware of that residential appraisers were being placed under in the community? A. Well, there – our understanding was, and this is, you know, something that was taken into account when reviewing appraisals, is that appraisers were getting pressure to hit certain values.").

[40]   Dr. Kilpatrick corrected the finding at issue in his supplemental report in that action. *E.g.*, Ex. 18 (Kilpatrick 7/14 Tr.) at 42:24-43:21. After submission of Dr. Kilpatrick's January report, Dr. Kilpatrick identified several errors in the CAM process not identified when the same version of the CAM had been used in *Merrill Lynch*. *Id.* at 69:14-70:10. Dr. Kilpatrick corrected the findings and issued a supplemental report in March replacing the January report in its entirety. *E.g.*, *id.* at 42:24-43:21, 426:14-430:19. During his deposition in *Goldman Sachs*, Dr. Kilpatrick explained in detail how his supplemental report differed from the January *Goldman Sachs* report and the prior *Merrill Lynch* report. *Id.* at 70:11-73:17, 428:4-430:19.

III.   **DEFENDANTS' ATTACKS ON THE GREENFIELD AVM ARE MERITLESS AND GO TO WEIGHT**

In launching their attack on Dr. Kilpatrick's use of the Greenfield AVM, Defendants mischaracterize Dr. Kilpatrick's opinions as attempting to "tell the jury what an appraiser subjectively believed several years ago." Mot. 36. In fact, Dr. Kilpatrick provides objectively-determined, "market value" estimates for each of the Nomura Sample Properties,[41] which he aggregates to provide the average deviation between the original appraisal values and the Greenfield AVM's estimate of market value. Accuracy Report at 62-63 ("In other words, the original 672 Nomura sample appraisals were on average 8.92% higher than the true market value of the properties"). Based on these results, Dr. Kilpatrick identifies a systemic shift that is evidence of appraisal inflation. Ex. 45 (Accuracy Report) at 63 ("Thus, the Greenfield AVM results demonstrate that there was a systemic difference between the Nomura sample appraisals and those of the general stock of U.S. property values. Further, the results show that, as a whole, the Nomura Appraisals systematically overstated the value of the properties being appraised, leading to an understatement of the true LTV ratios."); Ex. 17 (Kilpatrick 11/13 Tr.) at 180:8-180:15 ("Q. What do you mean when you say that the Greenfield AVM generates the true market value of the Nomura subject properties on average? A. I mean exactly what I -- what I say there. On average it -- it -- it computes the true market value.").[42]

Defendants try to criticize Dr. Kilpatrick's use of the Greenfield AVM as "unreliable," but in so doing make a fundamental error—they conflate the general method or technique used by Dr. Kilpatrick with his specific application of that method to the facts of the case. As Judge Rakoff recently concluded, an expert's use of an AVM,

> [i]nevitably . . . means that the opinion of any expert testifying on
> this issue involves a degree of subjectivity. But this is not a basis

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[41]   Ex. 45 (Accuracy Report) at 76 ; Ex. 58 (USPAP 2014), Advisory Opinion 18; *see also* Ex. 3 (Doty 6/12 Tr.) at 44:3-5 ("Because sale prices are what is considered to be market value and that's what our AVMs are designed to estimate is market value.").

[42]   Dr. Cowan later used the individual market values from the Greenfield AVM, accounting for both sampling variances and modeling variances, to further identify a system inflation rate of 11.1% across the SLGs, bounded by a 95% confidence interval. Ex. 53 (Cowan 10/7 Report) ¶ 30.

> for rejecting such an opinion on the ground that the methodology is
> "unreliable."   Indeed, the testimony at trial indicated that the
> methodology applied by [the expert] is the same kind of
> methodology underwriters apply in the field. It is the product of
> experience, and in this case, can be (and was) adequately tested by
> cross-examination.

Assured Guar. Mun. Corp. v. Flagstar Bank, FSB, 920 F. Supp. 2d 475, 505 (S.D.N.Y. 2013).

Just so here. Defendants do not dispute that AVMs have been qualified for use in expert

testimony—including Dr. Kilpatrick's AVMs. *See, e.g.*, *id.* (denying motion to exclude

testimony of expert testimony based on, *inter alia*, a proprietary AVM model); *In re Katrina

Canal Breaches Consol. Litig.*, No. 05-4182, 2007 WL 3245438 (E.D. La. Nov. 1, 2007)

(denying motion to exclude Dr. Kilpatrick's expert testimony at class certification stage;

concluding that "[c]learly, mass appraisal is an accepted methodology" and "[t]his approach is

used in appraiser's offices all over the country to determine value").[43] Defendants' own experts

have acknowledged that AVMs were broadly used in the industry.[44]

Dr. Kilpatrick's application of well-established AVM methodology to the facts of this

case present no basis for concluding that his testimony is unreliable. *Wald*, 2005 WL 425864, at

*5 (admitting expert testimony that "is basically just an application of this theory to the facts of

this case"). Defendants do not dispute that the Greenfield AVM estimates market values at a

greater level of precision than does a typical commercial AVM—Dr. Kilpatrick presents his

results at 95% statistical confidence level while commercially available AVMs do not report at

anywhere near that level.[45] It is also beyond dispute that the Greenfield AVM provides greater

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[43]   *See also* James Kirchmeyer & Peter Staas, *AVMs 201: A Practical Guide to the Implementation of Automated Valuation Models* at 24–25 (2008); USPAP AO 18; "Standard on Automated Valuation Models (AVMs)," International Association of Assessing Officers, September 2003; "Fannie Mae's Perspective on Automated Valuation Models (AVMs)," Fannie Mae, 2006, *available at* http://web.archive.org/web/20060525032729/http://www.efanniemae.com/sf/guides/ssg/relatedsellinginfo/avms/.

[44]   *See* Ex. 9 (Isakson 6/19 Dep. Ex. 40605, Using Multiple Regression Analysis in Real Estate Appraisal, Hans Isakson, Ph.D., 69 The Appraisal Journal (2001)); Ex. 51 (Kennedy Report) ¶¶ 3-5; Ex. 11 (Kennedy 7/25 Tr.) at 78:22-79:21 (referring to AVM's as "statistical approach to value" and citing industry acceptance); *see also* Ex. 20 (Lucco 8/13 Tr.) at 630:8-16 ("Q. And from your experience and practice, do you understand that to be what happens in the real world, in other words, AVMs, providing a licensed appraiser has this knowledge base, are permitted to use an AVM to render a value opinion? A. I believe that's the case, yes.").

[45]   While Defendants assert that AVMs are not used in the industry to provide reliable value estimates or evaluate the accuracy of original appraisals, Mot. 36, their own purported due diligence expert conceded that "AVMs . . .

transparency of its operation than other commercially available AVMs.[46] Mot. 36. The methods

used by Dr. Kilpatrick in his AVM analysis—regression analysis performed in an automated

valuation model—are peer reviewed and generally accepted, similar to an analysis the Court

found reliable earlier this year, and therefore presumptively reliable. *In re Elec. Books Antitrust

Litig.*, No. 11 MD 2293, 2014 WL 1282293, at *21-22 (S.D.N.Y. Mar. 28, 2014); *see id.* at *9

n.18 (quoting *Bickerstaff v. Vassar Coll.*, 196 F.3d 435, 448 (2d Cir. 1999) ("[M]ultiple

regression analysis is a commonly accepted method of statistical analysis for examining the

effect of independent variables on a dependent variable") (internal alterations omitted).

A.   The Greenfield AVM Has Been Validated

While Defendants assert that the Greenfield AVM has not been "independently

validated," Mot. 39, in fact, it has been validated in several ways. *First*, the Greenfield AVM

was validated by Dr. Albert Lee, an experienced Ph.D. econometrician and statistician who has

substantial experience in validating econometric models. In his attached declaration, Dr. Lee

validates the central statistical measures of the Greenfield AVM, including its regression-specific

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were useful tools to consider when evaluating the value of collateral supporting a loan." Ex. 64 (Grice Report) ¶ 82,
See also Ex. 12 (Kennedy 11/5 Tr.) at 159:22-160:3 ("Q. And you recognize what I just read to you as the federal
definition of market value? A. Correct. Q. And that's what AVMs predict? A. Correct.") And Dr. Kilpatrick has
reported his findings at 95% confidence, a statistical confidence level far in excess of that required in the industry.
See Ex. 11 (Kennedy 7/25 Tr.) at 178:22-179:13. And contrary to Dr. Isakson and Dr. Hausman, the only Defendant
expert with any experience in developing AVMs, Mr. Kennedy, agrees that "the industry standard is 68%
confidence. *Id.* at 262:18-22; *see also id.* at 267:1-2 ("And the floor is normally 68 percent in the industry."); Ex. 3
(Doty 6/12 Tr.) at 138:21-139:8 ("Q. And what are the FSDs, if you can tell me, please, that you saw in that
document and you understand as a representative to be reflective of the FSDs for the forecast standard deviations of
the CoreLogic AVMs utilized between 2005 and 2008 for defendants? A. The forecast standard deviations have had
a cutoff of 25. Maximum FSD has been 25 since that time frame, and they're still 25. And the FSDs still represent
that the AVM's estimate of value has a 68 percent probability of being within plus or minus X percent of the true
value, X being the FSD.").

[46]   Typically, AVM coding, data, and operation are not disclosed and treated as a black box analysis. Ex. 12
(Kennedy 11/5 Tr.) at 82:11-86:9 ("Q. And you don't have the code for these other AVMs to determine what
relationship it may have to a statistical confidence interval; is that right? A. No, we don't have the code, but we do
have a lot of outcomes analysis that we can derive patterns from."). Even Defendants' own value due diligence
personnel admitted they did not know how the AVMs that they relied upon operated. Ex. 26 (Scampoli 11/26 Tr.) at
212:4-213:5; Ex. 25 (Sabo 12/5 Tr.) at 237:20-240:23. To the contrary, Dr. Kilpatrick has fully disclosed the code,
data, and operation of the Greenfield AVM consistent with USPAP Advisory Opinion 18, USPAP 2014-2015,
Advisory Opinion 18, a disclosure that Defendants' have taken advantage of to manipulate the coding and output in
attempts to discredit the Greenfield AVM. Lee Decl. ¶ 40 ("Dr. Hausman's purported correction would force the
Greenfield AVM to use atypical properties, based on extreme sales prices and sales price to assessed value ratios, as
the basis for valuing the Nomura sample properties. The artificial influence of these extreme properties accounts for
the average shift in value of 18.0% that Dr. Hausman reports.").

confidence intervals, the application and sensitivity of the cross-validation filter used to value the Nomura subject properties, the accuracy of the AVM in predicting actual property sales prices, and several fit statistics. Dr. Lee concludes that, for each of these measures and overall, the Greenfield AVM demonstrates robust statistical performance and the contrary opinions of Nomura's experts are either incorrect or grossly overstated. Lee Decl. ¶ 7 ("The *corrections* performed in the Hausman Report, which incorrectly incorporates the error term (i.e. the difference between predicted value and sales price) for the observations that are rejected by the C.V. filter into the log transformation, is inconsistent with the standard method and inappropriate.").

     Second, the Greenfield AVM was validated by Nomura's own AVM expert, Mr. Kennedy, when he used four commercially available, retrospective AVMs used to "benchmark" its performance and found that the Greenfield AVM predicts actual sales prices with greater accuracy than did those four, "industry accepted" AVMs.[47] Ex. 51 (Kennedy Report) at 16-38. For the middle 90% of sales, the Greenfield AVM estimates market values that are, on average, slightly *higher* (*i.e.*, more conservative) that the values produced by Mr. Kennedy's AVMs; it offers a more precise median valuation; it produces a lower standard error; it has a lower median deviation from actual sales price; and it provides predictions with a lower standard deviation of error. Ex. 52 (Kilpatrick 10/6 Report) at 6-7 & Tbl. 3; Lee Decl. ¶ 36. The Greenfield AVM also predicts *lower* inflation of the original Nomura appraisal values than do the four commercial AVMs. Ex. 52 (Kilpatrick 10/6 Report) at 7, Tbl. 4 (Greenfield AVM 8.92% inflation;

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[47] Recognizing that his own AVM analysis supported, not undermined, the accuracy of Dr. Kilpatrick's Greenfield AVM, during his deposition, Mr. Kennedy repudiated this aspect of his own analysis and opined for the first time that the four commercial AVMs he used to analyze the Greenfield AVM in his expert report were also unreliable. Ex. 11 (Kennedy 7/25 Tr.) at 110:14-17 ("Q. All right. So none of them perform to a level of reliability that you believe you'd be comfortable with? A. Correct."); *id*. at 374:14-21 ("it just appears all to be unreliable"). As a result, Defendants' apparent new position is that their expert used four "unreliable" AVMs as a benchmark the Greenfield AVM. Ex. 12 (Kennedy 11/5 Tr.) at 215:13-216:4 ("So your real opinion is that all of these AVMs are unsatisfactory, right? A. Correct. Q. All of these AVMs are unreliable, in your opinion? A. I think it's fairly evident that they are not performing well on this data set and this distribution. Q. And it's your opinion that no AVM can look back however many years to the '04 to '07 period, right? A. That opinion is based on -- yes, what I've read and the testing that I've done. They just don't do a good job.").

Collateral Analytics AVM 10.14% inflation; Real Info AVM 12.30% inflation; DataQuick

CMV-P AVM 10.24% inflation; DataQuick CMV-AE AVM 12.62% inflation).[48]

     Third, contrary to Defendants' assertions, Mot. 49, the Greenfield AVM has been

validated against the Nomura Sample Properties and accurately predicts those sales prices. After

removing a limited number of outliers and testing the middle 90% of sample sales properties, the

Greenfield AVM accurately predicted the actual sales price within the almost the same variation

(0.15) that Dr. Kilpatrick calculated in connection with the variation (0.151) that he used for his

gating benchmark. Within this variation, the Greenfield AVM actually *overvalues* the Nomura

Sample Properties relative to their actual selling prices by an average of 1.26%, an "error" that

results in an *underreporting* of the severity of the overvaluation of the Nomura Sample

Properties. Ex. 52 (Kilpatrick 10/6 Report) at 9; Lee Decl. ¶¶ 35.[49]

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[48] Having no response to these clear, indisputable, statistics, Defendants try to obfuscate, asserting that "[o]n average, the Greenfield AVM missed the actual sales price of the Nomura Sample Properties by 17%." (Mot. 49) (citing Def. Ex. 33 at 45 tbl. 3). This is incorrect. Nomura purports to offer an "average" difference, which is a useful descriptive statistics for assessing a model's bias. Ex. 39 (Kennedy 11/5 Dep. Ex. 58302) at C ("A truly unbiased AVM would produce an average of 0%."); Ex. 40 (Kennedy 11/5 Dep. Ex. 58303) at JPMC_DBNTC_0002280156. Yet, what Nomura represented as an "average" difference was actually a mean absolute difference calculated by its expert Mr. Kennedy. Def. Ex. 33 at 45 tbl. 3. Mr. Kennedy himself acknowledged however that mean absolute errors are "disproportionately affect[ed]" by outliers and therefore "not as accurate in illustrating absolute error." Ex. 12 (Kennedy 11/5 Tr.) at 125:4-13. Instead, median absolute errors are a preferred "industry standard." Ex. 39 (Kennedy 11/5 Dep. Ex. 58302) at C; Ex. 12 (Kennedy 11/5 Tr.) at 124:8-14. Defendants further confuse the issue by relying on an analysis from Mr. Kennedy who failed to remove a miscoded multi-parcel sale that Dr. Kilpatrick identified in his May 15, 2014 initial report and removed for sales validation. Def. Ex. 33 at 44-45 Tbl. 3. To correct Defendants' misstatement, "on average, the Greenfield AVMs missed the actual sales price of the Nomura Sample Properties by 0.0% to -0.3%." Ex. 54 (Kilpatrick 11/10 Report) at 22 & Tbl. 3. The Greenfield AVM performs similarly well comparing median and mean absolute errors. Indeed, the Greenfield AVM's median absolute error rate is comparable to other industry retrospective AVMs and contemporaneous AVMs that Nomura used: Greenfield AVM (11.4%), Collateral Analytics (8.7%, Real Info (11.4%), DataQuick P (8.1%), DataQuick AE (8.7%). The Greenfield's mean absolute error is also comparable: Greenfield AVM (15.1%%), Collateral Analytics (13.0%), Real Info (14.4%), DataQuick P (12.0%), DataQuick AE (12.8%). Ex. 54 (Kilpatrick 11/10 Report) at 22 & Tbl. 3.

[49] The predictive power of the Greenfield AVM is further validated by its application to the subject properties in the *Goldman*, *HSBC* and *Ally* actions—in each case, the Greenfield AVM predicted the values of the subject sales properties with exceptional accuracy. Ex. 59 (Kilpatrick 6/27 Report) at 1. As in this case, with the acceptable variation, the Greenfield AVM consistently *underreported* the severity of overvaluation in the sample properties for the former-defendant banks. Ex. 38 (Kennedy 7/25 Dep. Ex. 41218, Formatted Goldman Kennedy Deposition Table 1, Summary) (Greenfield AVM 8.9% inflation; Collateral Analytics AVM 9.2% inflation; RealInfo AVM 11.0% inflation; RELAR AVM 16.2% inflation); Ex. 38 (Kennedy 7/25 Dep. Ex. 41218, Formatted HSBC Kennedy Deposition Table 1, Summary) (Greenfield AVM 8.0% inflation; Collateral Analytics AVM 8.6% inflation; RealInfo AVM 10.1% inflation; RELAR AVM 14.6% inflation).

Finally, the Greenfield AVM has been validated by the AVMs that Defendants used in their own diligence process. The Greenfield AVM produced estimates that were, on average, more accurate (lower mean error) and more precise (lower variance) than the estimates produces by the AVMs that Nomura used in conducting contemporaneous valuation diligence. Ex. 54 (Kilpatrick 11/10 Report) at 20-22 & Tbl. 3; Lee Decl. ¶ 37. But even Nomura's AVMs found that approximately 57% of the purported valuations were inflated, although Defendants did not disclose this information to investors. Ex. 55 (Cipione Decl. Ex. 40)—Nomura conceded as much in its opposition to FHFA's Rule 56 motion regarding due diligence. Ex. 56 (Mishol Decl. Ex. 17) (40.9% of loans with Final LTV ratio greater than in the offering materials; 6.3% of loans with Final LTV ratio greater than 100%).[50]

In sum, Defendants' offer no valid reason why Dr. Kilpatrick's testimony should not be admitted here, as it has been in numerous cases, including in *Palmisano*, where it was admitted over the defendant's objection—nearly identical to Defendants' meritless assertion here (Mot. 43)—that Dr. Kilpatrick ignored sales data in giving his opinions. *Palmisano v. Olin Corp.*, No. C-03-01607, 2005 WL 6777561, at *7 (N.D. Cal. July 5, 2005)("[U]nlike the experts in Olin's authorities, Kilpatrick did not necessarily need to eliminate other possible causes of plaintiffs' damages to render a helpful opinion."); *see also Hartle v. FirstEnergy Generation Corp.*, No. 08-1019, 2014 WL 1317702, at *9 (W.D. Pa. Mar. 31, 2014) (admitting much of Dr. Kilpatrick's testimony because he "had 'good grounds' for his choices in applying the hedonic regression analysis"). As that latter court correctly concluded when considering Defendants' claim of "improper exclusion of some sales data," Dr. Kilpatrick's testimony "meets the threshold for admissibility." *Id.* While Defendants point to two cases in which Dr. Kilpatrick's testimony was excluded, Mot. 41, in those instances he tried to measure the effect of environmental

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[50]   Ex. 54 (Kilpatrick 11/10 Report) at 16-19 ("Nomura's final value is less than the value reported by Nomura in its Offering Materials for 57.2% of the loans with final values (1,360/2,378) in the SLGs at issue."). Even in Mr. Kennedy's limited review of Defendants' value due diligence process he conceded that at least 10% of the appraisals that obtained AVM or BPO review were ultimately out of tolerance. Ex. 12 (Kennedy 11/5 at Tr.) at 166:22-167:3 ("Q. . . . Of the 87 that had either an AVM value or a BPO value that was returned, 10 percent was out of tolerance; is that right? A. According to what I am seeing here, yes.").

contamination on plaintiffs' properties, but did not include the sales prices of comparable

properties sold shortly after the contamination. *See Exxon Mobil Corp. v. Albright*, 71 A.3d 30,

101-02 (Md. 2013) ; *Palmisano*, 2005 WL 6777561, at *5. Here, by contrast, Dr. Kilpatrick was

not examining the effect of an event on the values of properties—he evaluated the

reasonableness of the appraisals of properties—and he expressly relied on the sales prices of

comparable properties in predicting subject property values, even though he was skeptical that all

sales during the relevant time period reflect true arm's-length transactions. Ex. 13 (Kilpatrick

6/30 Tr) at 354:4-357:16.[51]

B.   Dr. Kilpatrick's Filtering Was Appropriate and Supported

Defendants next challenge Dr. Kilpatrick's choices to not consider outlier data, Mot. 43-

45, which poses another classic question about the weight of Dr. Kilpatrick's expert testimony,

not its admissibility. *See, e.g.*, *Bazemore v. Friday*, 478 U.S. 385, 400 (1986) (Brennan, J.,

joined by all members of the Court, concurring in part) ("While the omission of variables from a

regression analysis may render the analysis less probative than it otherwise might be, it can

hardly be said, absent some other infirmity, that an analysis which accounts for the major factors

'must be considered unacceptable as evidence[…].' Normally, failure to include variables will

affect the analysis' probativeness, not its admissibility.") (internal citations omitted); *McCullock*,

61 F.3d at 1044 ("Disputes as to the strength of [the expert's] credentials, faults in his …

methodology, or lack of textual authority for his opinion, go to the weight, not the admissibility,

of his testimony.").[52]

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[51]   Defendants suggest that the Greenfield AVM must be further evaluated under the Interagency Guidelines is incorrect and irrelevant. The interagency guidelines that Defendants cite for the proposition that validation must be conducted by someone independent of the model is applicable only to federally regulated lending institutions, not appraisers such as Dr. Kilpatrick. Interagency Appraisal and Evaluation Guidelines, 75 Fed. Reg. 77,450, 77,450 (Dec. 10, 2010). However, accompanying this response, Dr. Lee of Summit Consulting has provided further, independent validation of the Greenfield AVM. *See* Lee Decl.

[52]   *See also In re High-Tech Emp. Antitrust Litig.*, 2014 WL 1351040, at *14 (N.D. Cal. Apr. 4, 2014) ("The Court finds that the fact that these two variables are not statistically significant at the 1%, 5%, and 10% levels goes to the weight, not the admissibility of Dr. Leamer's model."); *Discover Fin. Servs.*, 582 F. Supp. 2d at 507 ("To the extent Defendants have any questions about the weight or the sufficiency of the evidence upon which Dr. Hausman relied, or the conclusions generated therefrom, those questions can be asked on cross-examination.").

Defendants do not reconcile their arguments with the procedures used by their own experts, who filter data in many of the same ways that Dr. Kilpatrick did. Both CoreLogic and Defendants' own purported AVM-industry experts assert that filtering out non-arm's-length transactions and outliers is appropriate and necessary as a general matter, Ex. 3 (Doty 6/12 Tr. at 43:24-44:25); Ex. 11 (Kennedy 7/25 Tr.) at 47:13-48:23,[53] and Mr. Kennedy mechanically filters likely outliers in exactly the same fashion that Defendants dispute here.[54]

> *1.*   Dr. Kilpatrick Properly Used A Cross-Validation Filter To Remove Observations

As with their other attacks on Dr. Kilpatrick's filtering, Defendants' emphasis on the Cross-Validation Filter (Mot. 39-41)—the only filter that affects Dr. Kilpatrick's value opinions —likewise fails. Defendants cannot explain why a filter that removes comparables whose values are not adequately explained by the hedonic characteristics being evaluated by the Greenfield AVM is improper, much less unreliable.[55] Comparable observations removed by the Cross-Validation Filter include, among others, properties with errant values in the $100s of millions[56]

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[53]   Defendants' statistical experts also conceded that some degree of data filtering is appropriate in regression modeling. Ex. 9 (Isakson 6/19 Tr.) at 103:21-104:22; Ex. 7 (Hausman 7/30 Tr.) at 160:21-161:9. These experts, however, are not qualified to opine on the valuation of real estate. Ex. 9 (Isakson 6/19 Tr.) at 227:4-10 ("Q. I think we've established today, though, that you don't have a working understanding of USPAP, correct? A. That is correct. Q. And you've never performed appraisals in your career? A. I have not."); Ex. 7 (Hausman 7/30 Tr.) at 62:22-63:19 ("Q. You're not an appraiser? A. Correct. Q. You've never been a licensed appraiser, right? A. Correct. Q. You have no designations from any appraisal or real estate association whatsoever, right, sir? A. Correct. Q. You have no awards from any prestigious real estate bodies, you know, authoritative bodies or licensure bodies or any kind of other real estate body? A. Correct. Q. No graduate teaching in real estate, right, sir? A. Correct. Q. Have you ever built a real estate valuation model of any sort, you personally? A. No, I've advised on them, but I've never built one personally.").

[54]   Ex. __ (Kennedy 7/25 Tr.) at 40:15-41:23 ("Q. And in connection with having your – the individual with the assistance of the other individual you described who performs the matching routines on the database and does the QC process, this is being done, if I understand, to remove non arm's-length transactions, outliers. Correct? A. Correct. Q. And is there any property-level review being performed by anyone? . . . A. No. And there's reasons for that, that we don't do that. We have some back-end processes as well to -- for those properties that do get through the system -- because nothing's a hundred percent -- that we can take a look at.").

[55]   *See* Appraisal Institute, The Appraisal of Real Estate at 321 (13th ed. 2008) ("The data collected should be meaningful and relevant. All pertinent value influences, facts, and conclusions about trends should be clearly indicated in the report and related specifically to the property being appraised.").

[56]   Ex. 7 (Hausman 7/30 Tr.) at 203:10-204:7 ("But I want to ask you if the sales prices, you know, given the appraisal values and the sales prices, for instance, in any, in these extracts of the types of properties, or the types of characteristics for properties that you'd want to remove in connection with running any robust predictive regression model? I have your property ███

and properties who's sales prices are not consistent with their reported hedonic characteristics and thus reflect non-arm's length transactions or properties that have meaningful hedonic characteristics that are not disclosed or discernible in the data available to Dr. Kilpatrick. *See* Lee Decl. (explaining how Bill Gates is not as suitable observation for modeling the relationship between education and earning capacity, as he was a college dropout). In particular, as Dr. Lee explains, use of cross-validation filtering "is a standard practice in applied statistical and econometric modeling, and is broadly supported by published journal articles." Lee Decl. ¶ 7. Regression models, like the Greenfield AVM, are sensitive to outliers that can "unduly and inappropriately" affect regression results, unless addressed. *Id.* ¶ 14. Moreover, as applied in the Greenfield AVM, the cross-validation filter demonstrates a high degree of stability: the various filter thresholds do not affect the average AVM output, until the filter is nearly entirely removed. *See* id. ¶ 23 ("[T]he effect of relaxing the C.V. filter on the Greenfield AVM forecasts is not material and does not move in a single direction.").

For proof that the use of the Cross-Validation Filter increases the reliability of Dr. Kilpatrick's analysis, the Court need look no further than Defendants' own expert on linear regressions and statistics, Dr. Hausman, who agreed that cross-validation filters are a generally accepted tool for removing outliers. Ex. 7 (Hausman 7/30 Tr.) at 282:18-283:11 ("No, I've never said that the cross-validation -- you know, I -- he may have explained somewhere in his deposition how he got to that and I don't have memory that he said in his report, but he might have, how he got to 0.25. But in principle, you know, he can use that."). Dr. Hausman likewise agreed that it was proper to eliminate properties for treatment as comparable properties from evaluation by eliminating outlier properties, such as those with appraisals of approximately

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██████████████████████████   A. Okay, so I haven't seen these before and, you know, I need to look at them, but I do agree that a sales price of over a billion dollars is unlikely to be accurate."); *see also id.* at 205:9-24 ("Q. Would you agree with me that one way you may want to go about doing it is to compare the relationship between sales price and appraised value statistically? A. Yes, that would be one thing you might want to consider. Q. In other words, take a look at how appraised value is comparing to sales price and come up with some cutoff that you believe removes errant data? A. That's a possibility. Although you might want to look at sales price alone. I mean if it's over a billion dollars it's very unlikely to be correct.").

$100,000 but sales values of over $1,000,000,000. *Id.* at 203:10-204:7 ("So I haven't seen these

before and, you know, I need to look at them, but I do agree that a sales price of over a billion

dollars is unlikely to be accurate."). Thus, far from being so "unreliable" that it should not be

presented to a jury, Dr. Kilpatrick's analysis is consistent with Defendants' own experts'

testimony and well-grounded in applicable appraisal methodology.

        As a further challenge to the Cross-Validation Filter, Defendants recycle a failed

argument from Dr. Hausman's Report purporting to find an 18% (or $39,500 on average) bias in

the Greenfield AVM. Mot. 40. However, as Dr. Lee explains, the adjustment Dr. Hausman

performed was to remove the Cross-Validation Filter entirely—thus evaluating the Nomura

Sample Properties in comparison to the entire CoreLogic database of sales transactions, no

matter how errant or irrelevant. Lee Decl. ¶ 40 ("[T]he Hausman Report used one set of data for

the primary estimate, and a second set of data for the determination of the correction factor. In

effect, Dr. Hausman's purported correction would force the Greenfield AVM to use atypical

properties, based on extreme sales prices and sales price to assessed value ratios, as the basis for

valuing the Nomura sample properties"); Ex. 52 (Kilpatrick 10/6 Report) at 7-8 ("Dr. Hausman

substituted the mean squared error of the Greenfield AVM for a given property with the mean

squared error of a *different* AVM (one without filters and with different model coefficients) and

compares the transformed sales prices from his new and different model run to the original

transformed sales prices of the Greenfield AVM results. This apples-to-oranges approach

artificially, and improperly, inflates the effect of the proposed transformation adjustment."). Not

surprisingly, the results of the Greenfield AVM are skewed dramatically Dr. Hausman, who has

no real estate qualifications, provides no basis for removing the Cross-Validation Filter,

notwithstanding his agreement with such filtering[57] and that it indeed removes errant data.[58]

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[57] Ex. 7 (Hausman 7/30 Tr.) at 282:22-283:11 ("Q. Okay. But if you wanted to be -- if you don't believe the cross-validation filter is appropriate -- A. I never said that. Q.   Oh, I'm sorry? A. No, I've never said that the cross-validation -- you know, I -- he may have explained somewhere in his deposition how he got to that and I don't have memory that he said in his report, but he might have, how he got to 0.25. But in principle, you know, he can use that. I don't -- you know, I can sort of understand what he's up to.").

[58] Ex. 7 (Hausman 7/30 Tr.) at 203:10-204:7.

Even so, as Dr. Lee points out, the Greenfield AVM is insensitive to changes in the Cross-Validation Filter until the filter is nearly removed entirely. Lee Decl. ¶¶ 24-25. If Dr. Hausman's arbitrary removal of the Cross-Validation filter is corrected, even increasing the filter to a ratio of 1.0 from 0.25 then the average Greenfield AVM forecast decreases by only $600 and the predictive power remains high, with an R-squared of still 0.70 (OLS and 0.72 (OLSXY).[59]   Lee Decl. ¶ 24 & Tbl. 1. Once again, Defendants use their *Daubert* motion to raise weight-of-evidence arguments appropriately suited to trial through the presentation and cross examination of contrasting expert opinions. *See In re Joint Eastern & Southern Dist. Asbestos Litig.*, 52 F.3d at 1135.

> **2.**   **Dr. Kilpatrick Properly Filtered The Data Used To Create the Validation Gating Benchmark The Greenfield AVM**

Defendants devote a substantial portion of their attack on the AVM methodology (Mot. 39-48) to attacking various filters Dr. Kilpatrick used to select his comparable subjects which he solely uses to establish a gating benchmark to channel appraisals off for credibility analysis that *may* be inflated.[60] of these filters was ever applied in the valuation of the actual Normura Subject Properties themselves or even on the comparable properties used to value the Nomura Subject Properties. Instead the filters were solely applied on a much larger set of housing data to arrive at a set of properties that Dr. Kilpatrick had confidence would be the subject of arm's length sales transaction for purposes of establishing the validation benchmark.

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[59]   Defendants' economics and statistics expert, Dr. Hans Isakson, agrees that R-squared of 0.70 is indeed an acceptable value for a predictive model. Ex. 10 (Isakson 11/7 Tr.) at 251:10-22.

[60]   Indeed, Nomura's appraisal standards expert, Michael Hedden, agreed that indications of inflation from an AVM is a proper basis for performing "further analysis and research" on suspect appraisals for credibility. Ex. 8 (Hedden 11/21 Tr.) at 127:21-128:13 ("Q. Okay. Well, would you agree with me, sir, as an appraiser, that if you have an understanding or belief that an appraisal was inflated, based upon some other methodology, that that can play a role in your valuation of the credibility of the underlying appraisal; do you agree or disagree with that proposition? A. I would agree that if I was certain that there was another credible opinion that the, you know, the -- that the value was suspect, then, you know, given the source of that information to me I would then also then question the credibility of the underlying document, and it would require further analysis and research."), *Id.* at 128:24:129:14 ("I believe there would be a correlation between the credibility of the underlying appraisal report, if it could be shown that the source which called into question the value of the underlying document was accurate.").

Defendants latch into Dr. Kilpatrick's use of a gating benchmark to channel appraisals for credibility review to cast doubt on his separate valuation of the Nomura Subject properties. In so doing, Defendants focus primarily on the Greenfield AVM's use of a 15.1% (*i.e.*, 0.151) forecast standard deviation ("FSD"), without which Defendants erroneously claim Dr. Kilpatrick's "forecast standard deviation is dramatically higher." Mot. 42-43. In fact, the 15.1% FSD benchmark has no bearing on the properties that the Greenfield AVM values and is not generated from the values of the Subject Properties that the Greenfield AVM predicts. *See*, *e.g.*, Isakson Tr. at 333:12-21 ("A. The sole purpose of the calibration process is to calculate the industry wide statistics to use for comparison purposes. When he begins to estimate the values of the Subject Properties in this case -- and by Subject Properties I mean the properties that are secured by the loans in the securities -- he starts over again, he doesn't use any part of that calibration process."). The Greenfield AVM solely uses the 15.1% FSD as a gating mechanism for sending properties to the CAM. Kilpatrick Ex. 41 (Credibility Report) at 2, 11; Ex. 13 (Kilpatrick 6/30 Tr.) at 46:17-47:25 ("[A]n original appraisal which exceeds my determined forecast standard deviation for my model is thus determined to be objectively false. Now, that just gives me an input into my measure of credibility. In other words, that's just the entrance ramp, if you will, into the credibility analysis. . . [T]hat measure of forecast standard deviation allows me to have the starting point for my credibility assessment.").

Defendants also incorrectly argue that in one step of the validation exercise for determining the 15.1% FSD threshold, Dr. Kilpatrick erred in removing transaction data outside the middle 30th percentile of the ratio of sales price to assessed value (the "Middle 30% Filter"). Mot. 46.[61] Defendants again, however, never explain why their argument matters as to the valuation of the Subject Properties: as Defendants acknowledge (Mot. 42), Dr. Kilpatrick only applied this Middle 30% Filter for the "holdout" or "benchmark" set, to ensure that the

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[61]   As Dr. Kilpatrick explained, filtering out such data is authorized under guidance by the International Association of Assessor Offices ("IAAO"). While one of Nomura's experts maintains a subjective belief that IAAO guidance would not be used as a data filter (*see* O'Connor Dec. ¶¶ 19-20), Defendants again fails to explain whether or how this critiques would have any impact on the global FSD calculated by the Greenfield AVM.

Greenfield AVM could be properly used for identifying appraisals for subsequent credibility review. Ex. 13 (Kilpatrick 6/30 Tr) at 184:5-185:9 ("So in the process of developing filtering mechanisms, it's quite natural that I might filter data in a far different way for the two; both of those sets of filters aiming for the same thing, which is to get a clean set of data. The best set of data we can use. But certainly adhering to two somewhat different processes. One, an individualized process over the course of 3,000 plus individual appraisals, and one, a global FSD process which is determining an FSD globally over the United States."). That Defendants have found experts that disagree with Dr. Kilpatrick's efforts to obtain a subject validation dataset has little, if any, relevance to whether the property values for the actual Subject Properties were correctly estimated.

Last, Defendants fail in attacking Dr. Kilpatrick's filtering of the holdout set to remove properties where the value predicted by the Greenfield AVM was more than 100% different from the actual sales price (the "100% Error Filter"). Mot. 42-43. Although Defendants claim that removing the 100% Error Filter would cause the FSD to "skyrocket" (Mot. 43), Nomura's own expert acknowledges that removing the 100% Error Filter in its entirely adds back in less than 1% of filtered, outlier properties. Ex. 7 (Hausman 7/30 Dep.) at 173:9-22 ("Q. If you take out the high forecast error filter, you end up with instead of 69.98 not being used, 69.82 percent not being used? A. Right."). And even Dr. Hausman agrees that Dr. Kilpatrick properly removed some values from the dataset, such as properties with sales prices of $100,000,000.[62] *Id.* at

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[62]   Notwithstanding Dr. Hausman's agreement that filtering is an appropriate tool in real estate modeling, or that in spite of the filtering Dr. Kilpatrick's benchmarking exercise was not used to produce values for the valuation of the Defendant subject properties anyway, for their motion Defendants resorted to entirely removing all filters in an attempt to discredit Dr. Kilpatrick's benchmarking. Indeed, Defendants used, without exception all sales observations to recalculate a supposed forecast standard deviation for the Greenfield AVM. In so doing they obtained a forecast standard deviation of 200,000. In fact, Nomura's manipulation of the data to obtain the implausible 200,000 forecast standard deviation for its *Daubert* motion runs perfectly counter to the opinions of its own experts. Faced with even a subset of the suspect data from the CoreLogic dataset, Dr. Hausman and Dr. Isakson both agree that such data are outliers. Ex. 7 (Hausman 7/30 Tr.) at 202:21-205:8 ("Okay, so I haven't seen these before and, you know, I need to look at them, but I do agree that a sales price of over a billion dollars is unlikely to be accurate."); Ex. 10 (Isakson 11/7 Tr.) at 155:17-156:20 ("Q. Does that -- does that look like errant data to you, dirt? A. Those selling prices I would eliminate a priori."). Mr. Kennedy agrees and has written that including such data artificially influence the AVM's descriptive statistics. Ex. 12 (Kennedy 11/5 Tr.) at 103:17-104:16 (" You write "Median absolute error is an industry standard compared to the mean as it diminishes the impact of outliers or extreme values. That is, very large deviations, high or low, that may have a disproportionate

202:21-205:8 . This is, at best, a battle over expert judgment that the jury must resolve. *See In re Joint E. & S. Dist. Asbestos Litig.*, 52 F.3d at 1135.

C.   The Use Of Tax Assessed Value Is A Recognized And Reliable Variable

Defendants next take issue with a specific variable used by Dr. Kilpatrick, the tax-assessed value of the property, or "TAV," arguing that using TAV is an improper input into the Greenfield AVM because the data is from after 2005 to 2007 without a proper time adjustment. Mot. 50-51. Defendants' own experts discredit this argument. First, Defendants' claim that using TAV is improper is simply factually inaccurate; as Defendants' experts admitted, TAV is regularly used in the AVM industry. Ex. 12 (Kennedy 11/5 Tr.) at 68:23-69:7 ("I did some research and found that the DataQuick models, infrequently, but uses tax assessed values as one of their variables or cross-checks to their model. Q. And you use one of the DataQuick models in your report; isn't that right? A. Correct.").[63] Defendants' statistics and regression expert, Dr. Hausman, acknowledges that TAV can be appropriately used as a hedonic variable. Ex. 7 (Hausman 7/30 Tr.) at 153:17-154:12. Defendants' attempt to have Dr. Kilpatrick excluded for his used of TAV as a variable in his regression is inconsistent with the sworn testimony of its own experts. *See, e.g.*, *McCullock*, 61 F.3d at 1044 ("Disputes as to the strength of [the expert's] credentials, faults in his … methodology, or lack of textual authority for his opinion, go to the weight, not the admissibility, of his testimony.").

Second, Defendants' imply that the use of TAV as an independent variable is improper as the data is principally drawn from 2011 through 2014, which, as Dr. Kilpatrick states, was the result of data limitations.[64] Defendants present no evidence, however, that challenges the

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effect when using a mean. For example, one vendor could have nine 1 percent errors and one 100 percent error and their mean absolute error would be 10.9 percent. However, the median absolute error of 1 percent would be far more representative of the true error. This will provide some insight into the quality of the median absolute error rate." And that was how -- and that was your calculation for median absolute error when you wrote the AVM 101 testing chapter; isn't that right? A. Correct.").

[63]   Ex. 20 (Lucco 8/13 Tr.) at 595:21-596:11 ("Q. And so you do at least have a general understanding that commercially available AVMs, in connection with citations you have in your report, do use tax assessed value as explanatory variables in their hedonic regression analysis, correct? A. I'm aware that certain AVMs use tax assess information in their modeling, yes.").

[64]   Ex. 13 (Kilpatrick 6/30 Tr.) at 224:24:225-9.

efficacy of using TAV as an independent variable that is regressed back. Indeed, multiple statistical measures reveal the accuracy of the Greenfield AVM and the statistical significance of TAV from 2011 to 2014 as correlating to market values for the same properties in 2005 to 2007.[65] As Dr. Kilpatrick explained, the Greenfield AVM uses TAV as an independent variable by correlating its impact on market values through linear regression modeling. Ex. 17 (Kilpatrick 11/13 Tr.) at 134:14-135:7 ("Q. And can you be any more precise about how [the Greenfield AVM adjusts from tax assessment values in 2010 back to a market value in 2005]? A. I'd have to think about it. I mean remember, this is not a causality model but a correlation model. And so to the extent we're able to measure the correlation between these variables as measured in 2010 and the values that we're interested in 2005, this model does an extraordinarily good job of doing that. And so to get any deeper into the -- into the bee hive, we would simply need to unpack the math of ordinary least squares, the math of determining the correlation between an array of variables and a target variable of market value.").[66] Further, Dr. Lee points out that as used the TAV independent variable highly correlates with market values because TAV is a statistically significant variable in more than 99 percent of Greenfield AVM regressions. Lee Decl. ¶ 33. According to Dr. Lee, "[t]his means that, for purposes of the Greenfield AVM, the relationship between tax assessed value and sales price is stable and consistent such that the use of tax assessed value from subsequent years to the year in which the property's value is being estimated does not degrade the Greenfield AVM's predictions due to the use of ex post data." *Id*. ¶ 33.

In any event, there is no need for Defendants to speculate as to the predictive power of TAV as an independent variable.[67] To the extent TAV lacks predictive power in any given

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[65]   Defendants' cite only to choppy dialogue between Dr. Kilpatrick and counsel for Defendants to allege that the Greenfield AVM's time adjustment is incorrect. Mot. 51 (Def. Ex. 10 (Kilpatrick 6/30, 7/1 Tr.) at 331:9-334:11; Def. Ex. 8 (Kilpatrick 11/13, 11/14 Tr.) at 144:3-145:2).

[66]   Lee Decl. ¶ 34.

[67]   Ex. 17 (Kilpatrick 11/13 Tr.) at 57:2-16 ("As you know, and I just want to make it clear on the record here, I -- I utilized tax assessment data which is within the -- the confines of my model a -- a very powerful explanatory variable. And it -- tax assessment values or tax assessor determined values are, in fact, the results of boots-on-the-

AVM run, that would be reflected in Dr. Kilpatrick's standard regression model output. Lee Decl. ¶¶ 22-24, 31-32.[68]   Valid measures of statistical significance of the variables used by the Greenfield AVM such as R-squared[69]—which Defendants ignore—however demonstrate that TAV has strong predictive power. Ex. 47 (Accuracy Report App'x 6-1); Lee Decl. ¶ 33-34; Ex. 17 (Kilpatrick 11/13 Tr.) at 176:11-22 ("Q. And when you said in that answer that you're already assured of the accuracy of the Greenfield AVM, is that because of your validation exercise? A. That's because of the R squareds, the overall R squared as well as the individual point-by-point R square. Those are pretty powerful statistics for measuring the degree to which the variation in -- in price is explained by my model."); Ex. 13 (Kilpatrick 6/30 Tr.) at 57:17-58:25. In addition to having high R-squared values in spite of, *or perhaps because of*, TAV as an independent variable, the Greenfield AVM also outpaced its average accuracy among Nomura Sample sales properties in California, where Defendant experts claimed that due to various tax assessment regulations the Greenfield AVM would perform poorly.[70] Ex. 10 (Isakson 11/7 Tr.) at 258:5-259:2 ("Q. . . . [T]he standard deviation here is .11, 11 percent? A. Yes, I do. Yes. Q. That's a pretty good standard deviation for -- right, all things being equal? A. It is -- yeah, it's pretty good. It's less than the .151 that Dr. Kilpatrick calculated as his global FSD."). Beyond being wrong as a factual matter, Defendants are also wrong as a legal matter, because it is well established that disputes over whether a variable is a "good enough" proxy for other characteristics is an issue for the jury to decide. *See, e.g.*, *Sobel v. Yeshiva Univ.*, 839 F.2d 18,

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ground inspections by tax assessors and their -- their agents.   So while I didn't do a -- a personal boots-on-the-ground inspection, such inspections have been done and I'm utilizing that data accordingly.").

[68]   Such analysis is also consistent with industry standards: as one AVM provider notes, it opts not to use its TAV sub-model in markets where TAV is poorly correlated with sales price. Ex. 37 (Kennedy 7/25 Dep. Ex. 41213, DataQuick, CMV-Portfolio White Paper). And even Mr. Kennedy agreed that there can be "a strong relationship between the assessed value and the market value for the properties" in a specific jurisdiction. Ex. 11 (Kennedy 7/25 Tr.) at 296:2-17.

[69]   "R-squared" is a descriptive statistic that describes the ability of the model to describe statistical variance. A maximum R-squared of 100 indicates a perfectly predictive model where the variable has the highest possible explanatory power, whereas a minimum R-squared of 0 indicates the variable has no meaningful explanatory power. Lee Decl. ¶ 7.

[70]   Ex. 50 (Isakson Report) ¶ 88.

35 (2d Cir. 1988) (explanatory variables that were "not perfect measures" of independent variables did not render regression unreliable because "the simple fact of imperfection, without more" did not establish that regression was defective); *Newport Ltd. v. Sears, Roebuck & Co.*, No. 86-2319, 1995 WL 328158, at *2 (E.D. La. May 30, 1995) (rejecting *Daubert* challenge to regression analysis based on expert's choice to employ "national statistics" because that "choice [was] within his expertise"). Dr. Kilpatrick's reasonable decision to use TAV as an explanatory variable thus presents no basis to exclude his qualified, relevant testimony.

<p style="text-align:center">*   *   *</p>

All in all, not a single one of Defendants' attacks—even when not directly contradicted by its own experts—undermines the reliability of Dr. Kilpatrick's value predictions.
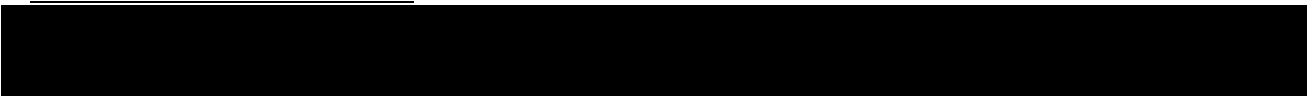
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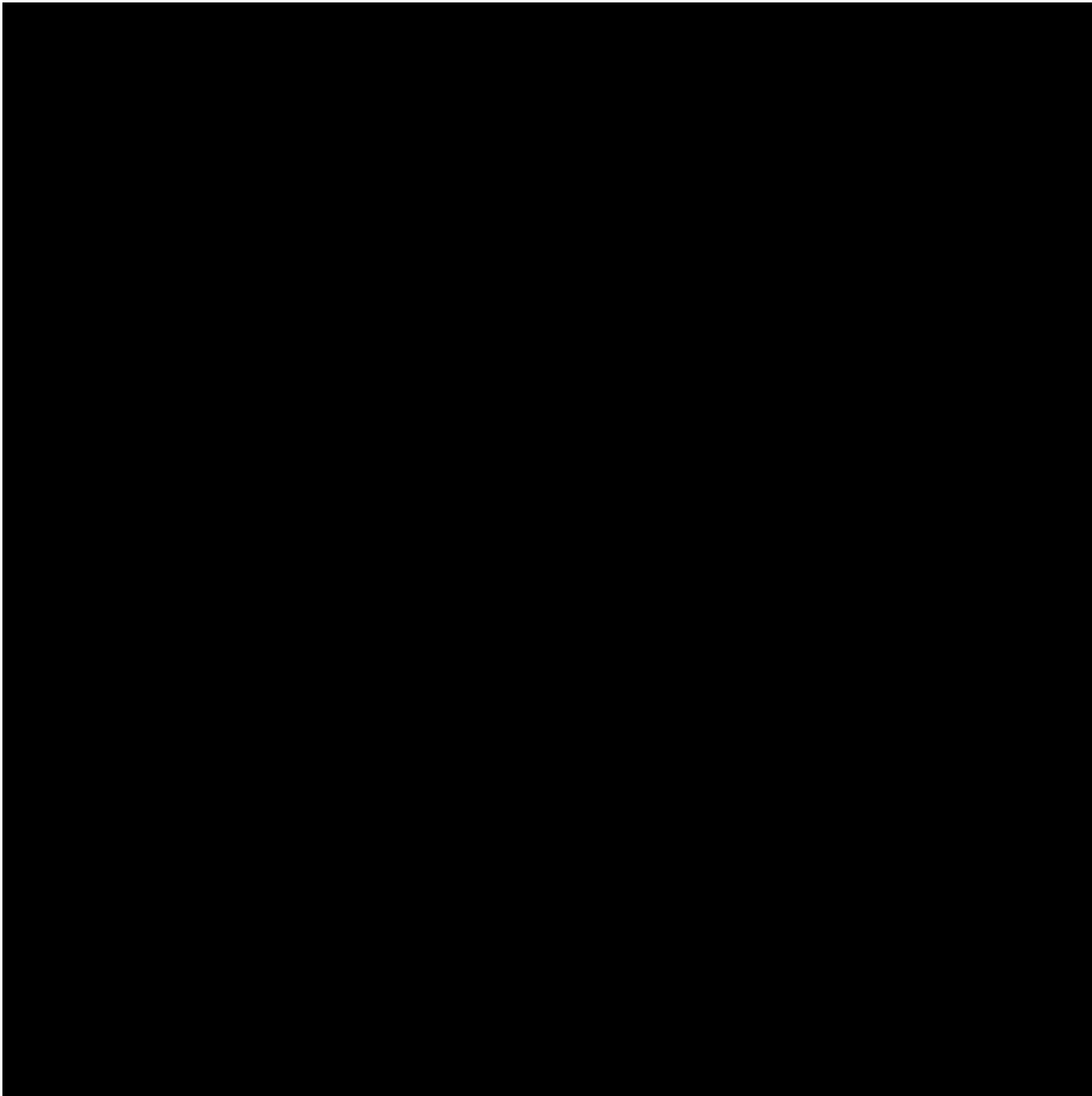
CONCLUSION

For the reasons stated above, Plaintiff FHFA respectfully requests that the Court deny

Defendants' motion to exclude the expert testimony of John A. Kilpatrick, Ph.D.

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       New York, New York

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